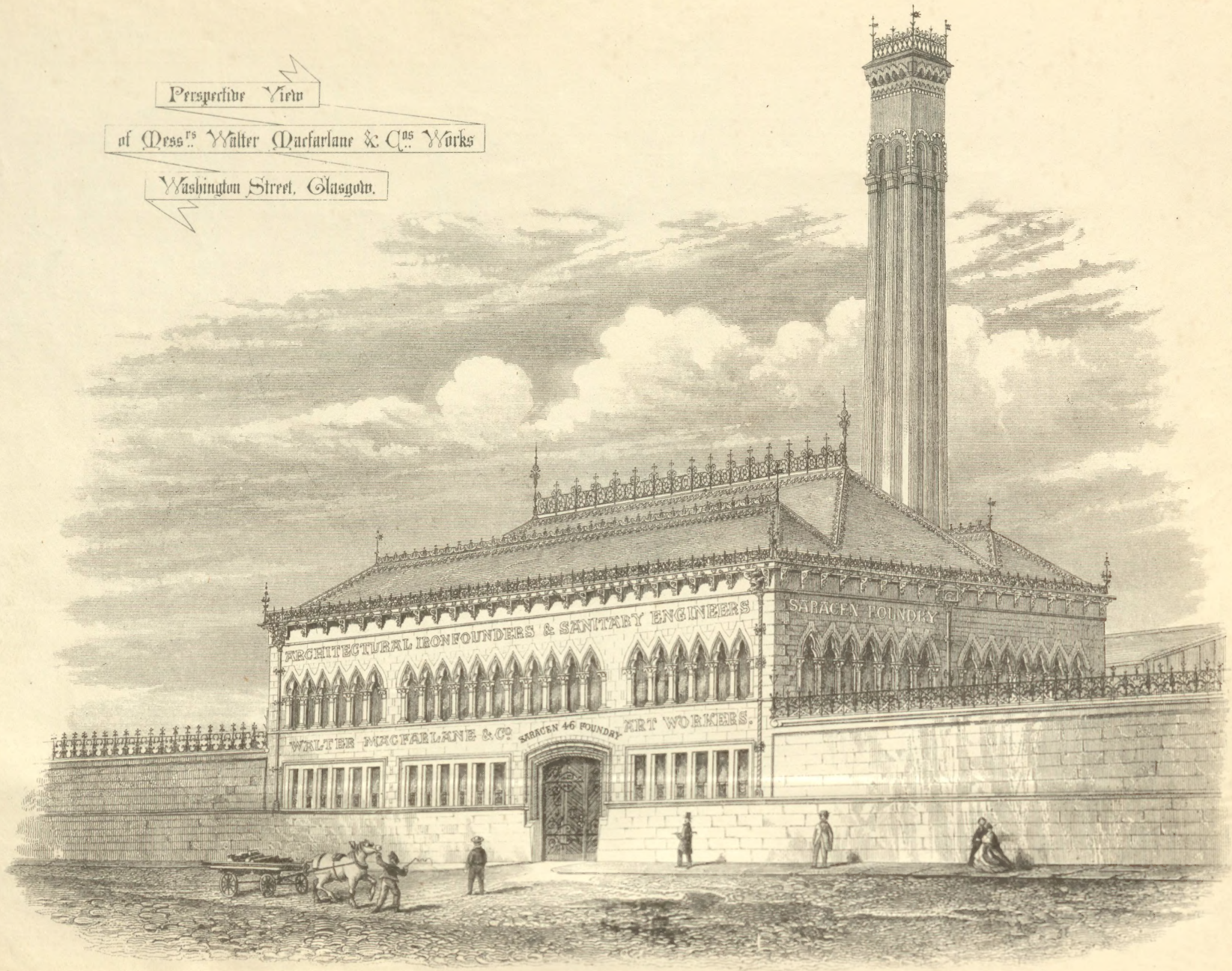
Perspective View

of Messrs. Walter Macfarlane & Cos. Works

Washington Street, Glasgow.



CATALOGUE OF

MACFARLANE'S

CAST IRON MANUFACTURES,

FOURTH EDITION.

AWARDED INTERNATIONAL PRIZE MEDAL, 1862.

Contractors by Special Appointment to Her Majesty's War Department.

VOL. I.—ARCHITECTURAL APPLIANCES.

WALTER MACFARLANE & CO.,

ARCHITECTURAL IRONFOUNDERS, SANITARY ENGINEERS AND ART WORKERS,

SARACEN FOUNDRY, GLASGOW.

AND 38 BEDFORD STREET, STRAND, LONDON, W.C.

Entered at Stationers' Hall.

1863.

PRESENTED TO

The Secretary, Science and Art Dept.

South Kensington Museum.

With the Compliments of MESSRS. WALTER MACFARLANE & Co.

CONTENTS OF VOL. FIRST.

ARCHITECTURAL APPLIANCES.

PREFACE TO THE FOURTH EDITION.

THE legitimate development and application of Iron Work, have been carefully studied and followed as a profession by our Mr. Macfarlane for the last thirty years, the earlier portion of that time being devoted to "Hammered Iron Work," and the latter to "Cast Iron Work." It is to be regretted that so valuable a material as Cast Iron, should occupy the subordinate position it has hitherto done, almost invariably appearing under the borrowed form of some other material, as stone, wood, bronze, &c. That it has a high destiny to fulfil, and is capable of occupying an honest and an honourable position, we think the following pages give ample testimony. Metals, like men, arrive at perfection through successive stages of refinement, and we must not lose sight of the fact that Cast Iron applied to the decorative arts, is only in its infancy; dating no farther back than two or three hundred years, during which time little intelligence has been evinced in realising its power and truthful expression.

In issuing this edition of our Illustrated Catalogue every care has been taken to extend its usefulness, by making it more than it has hitherto been a standard Text Book for the architect, the civil engineer, and the tradesman. We have endeavoured to embody in every detail, sound architectural and sanitary principles; along with careful adaptation to the purpose for which the *fitments* may be applied.

Volume First treats wholly on Architectural Appliances. Former editions contained little explanatory matter—the Architect was thus often left in doubt as to the suitability of the article illustrated for the purpose it was to be applied to, and in like manner the Tradesman was left very much to his own resources as to the mode of fixing or fitting up the various connections. These omissions we have now endeavoured to supplement, with the view of enabling the Architect to embody in his working plans the various details of the iron work; as on this depends the satisfactory completion of the Builder, Joiner, Plumber, and Slater's work. These Appliances have hitherto occupied a very subordinate place; doubtless resulting from the low style of art displayed in their manufacture, and the total absence of any effort to treat them properly. To remedy this has been the unremitting endeavour of our business life. The rapid progress now making in elevating even the commonest productions of the manufacturer to a comparative state of excellence, is perhaps nowhere more evinced than in this branch of trade.

Volume Second treats wholly on Sanitary appliances, which are now a recognised necessity in every well regulated community. Ten years ago we entered upon this field of labour, and it is a subject of congratulation to know that our views are endorsed by the most eminent and advanced minds; one difficulty we have had to encounter, that is, being in advance of the age. Confident, however, in the correctness of our views, we felt assured that this difficulty would vanish as an increased intelligence on sanitary science was spread among the people. The result has proved the correctness of our anticipations. Our various appliances are now becoming prominent features not only in the arrangements of public institutions, but also in the street architecture of towns. Public authorities now recognise the advantages accruing from providing such arrangements, as will enable the out-door population to comply with the ordinary requirements of nature, in the way most conducive to decency and comfort.

We make our grateful acknowledgements to those many kind professional friends who have assisted us in our various undertakings; and to our customers and the public generally, who have so warmly appreciated our efforts. With the view of simplifying the ordering of our goods, please describe each article by the words used in this book, always *specifying in the Schedule*, the maker's name, MACFARLANE. We find it necessary to state that every casting we make has our Trade Mark legibly impressed upon it,—thus

WALTER MACFARLANE & CO.

SARACEN FOUNDRY, GLASGOW.

N.B.—All our goods are coated with the finest oil paint before leaving the works.

DIRECTIONS FOR FITTING UP OUR ARCHITECTURAL APPLIANCES AT THE BUILDING.

PIPES AND THEIR CONNECTIONS.

Commence at the bottom of the stalk, and attach the first length to the building, coating the inside of the socket with white lead jointing, then press the spigot end of the next length into its place, making the joint perfectly tight with white lead jointing, and carry out in like manner to the top.

GUTTERS AND THEIR CONNECTIONS.

Commence at the right hand, and attach the first piece to the building, then coat the spigot with white lead jointing, and press the faucet end of the next length into its seat by bolt and nut, taking care to bring the end of the one length as close up to the other as possible, in order that no irregularities may appear at the joints; then pack and clear off the superfluous jointing.

RIDGE PLATES AND THEIR CONNECTIONS.

Commence at the right hand, and attach the first length to the roof by nails, screws. or bolts as the case may be, putting a little white lead jointing round the nail heads, and a strip of the same round the neck of spigot, pressing the faucet of the next length firmly towards the left hand, and fastening to roof as before.

CRESTING.

All our patterns of Cresting are dove-tailed, and kept in position by means of lead wedges, and the joints made good by white lead jointing.

The proper decorative treatment of these goods is a subject which has received from us considerable attention, and we suggest that all cast iron work should be specified to receive two coats of the finest red lead paint before leaving the Foundry, along with two finishing coats as near the real colour of the casting as possible, the ornamental parts being judiciously hatched with gold, when the design of the article and style of the building admits of it.

PART I.

RAIN WATER, SOIL, AND STOVE PIPES.

The continuous exertions made by us to improve the solidity and strength of Cast Iron Pipes, have met with complete success; our inventions in Pipe Moulding not only enable us to improve the quality, but also to produce such a variety of patterns as will enable the Architect to select a design that will best harmonise with the style of the building to which it may be applied. In a climate such as ours, where the rainfall is great, and where Water Closets, Sinks, Baths, and Lavatories, are in almost every house, it becomes an important question as to how the waste water from these can best be carried off. Rain Water Pipes have hitherto been placed into out-of-the-way corners, or hidden in the interior of the building, as if they were unfit to be seen. This no doubt arose from the low state of art they generally displayed, and we shall endeavour to show that, when properly treated, they have the elements within themselves of improving, rather than detracting from the amenity of a building. Each stalk of pipes should in all cases be connected with the underground drains, thus ventilating the sewers, by carrying their heated vapours over the house tops.

No. 1, Round Pipes, pages 6, 7, and 13. These are the commonest class, and are adapted for either Rain Water, Stove, or Soil pipes.

No. 2, Square Pipes, pages 8, 14, and 15. These make excellent Rain Water conductors; and are generally preferred of an oblong shape, but when they are for a corner, between two walls at right angles, they ought to be square or equal sided.

No. 3, Semi-circular Pipes, pages 9, 14 and 15. We do not illustrate the connections for these, as they are similar in all respects to the square pipe connections, shown at pages 14 and 15.

Nos. 4, 5, 6, and 7, Ornamental Pipes, pages 10, 11, and 12. With the view of more fully meeting the requirements of the present day, we have introduced such a variety of patterns as will harmonise with every style of architecture.

Heads, pages 13, 16, 17, 18, 19, and 20. The important position these occupy on a building give considerable scope for variety of design, as illustrated by the numerous patterns shown in our Catalogue, any of which can be supplied for every No. and size of pipe we make, either for flat walls or angle corners.

Ears, pages 21, 22, and 23. The fastenings for rain water pipes were generally of the most primitive kind, until we introduced Ornamental Ears, which now give so much character to the pipes. It is some-

times desirable to put the date of the building on the ear nearest the top, and Ornamental Ears on each faucet below. We can supply every pattern of Ear for every No. and size of pipe in our Catalogue, either for flat walls or angle corners.

ELBOWS, OFFSETS, &c.—Pages 13, 14, 15, and 24. Besides the various sizes shown in our Catalogue, we can make them to suit any projection of cornice or plinth *to order*, on being furnished with the exact sizes and bevels.

PEDESTALS.—We have introduced this new rain water pipe connection for the purpose of giving a proper architectural finish to the pipe stalk, and for connecting the same to the underground drains.

In order that the various details may be clearly laid down in the building plans, we give real size sections, and when sections are not given, each object is drawn to a scale, or the size itself is stated. We have also given several illustrative sheets of drawings, showing various modes of applying our pipes and their connections to the building, see pages 25, 37, 38, and 102.

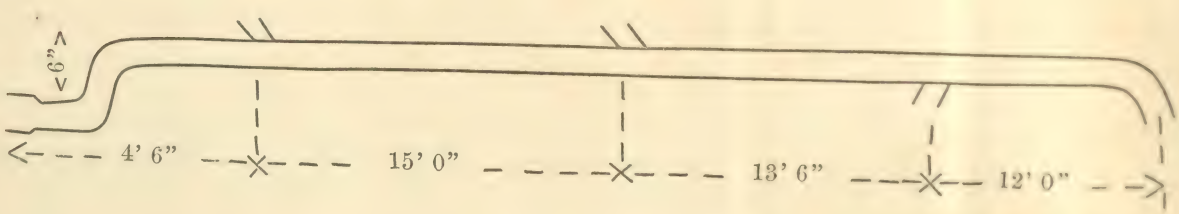
Schedules, besides specifying the No. and size of pipe, should state the No. of the head, and the whole of the fittings in detail.

In ordering pipes our customers may either order so many lengths, along with the necessary quantity of Heads, Ears, Offsets, Pedestals, &c., and cut them to suit the required heights themselves, or by giving us a rough sketch, showing the exact position of the various connections in each stalk, we will furnish them accordingly, all properly marked, and ready for fitting up, (see next page).

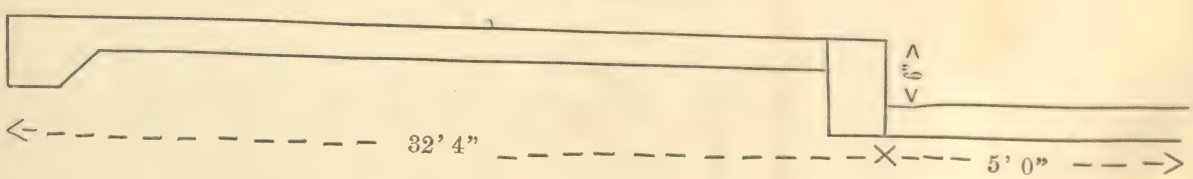
DIRECTIONS FOR GIVING ORDERS.

The following examples show the simplest method of ordering, and giving measurements for Pipes, when they are wanted cut to particular lengths.

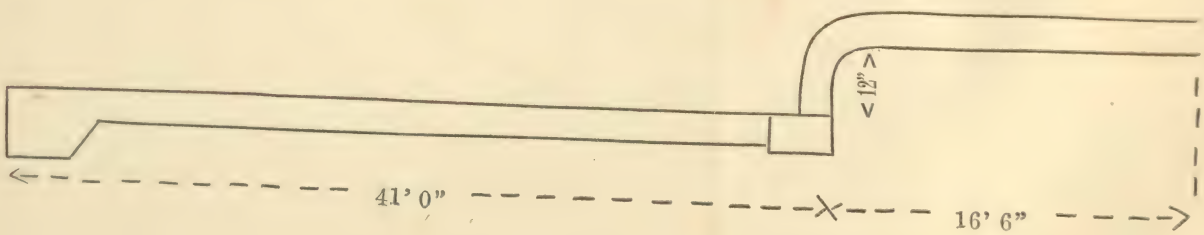
1 Stalk of No. 1 Pipes 4", with No. 2 Ears, Offset, Branches, obtuse Elbow, &c., as sketch.



1 Stalk of No. 4 Pipes, 5" × 3½", with No. 20 Ears, No. 20 Head, and No. 4 Offset, as sketch.



1 Stalk of Pipes, the 41' 0" length to consist of No. 4 Pipe, 5 × 3½", with No. 19 Ears, No. 19 Head, and No. 4 Elbow,—and the 16' 6" length to be 4" No. 1 pipes and elbow, as sketch.

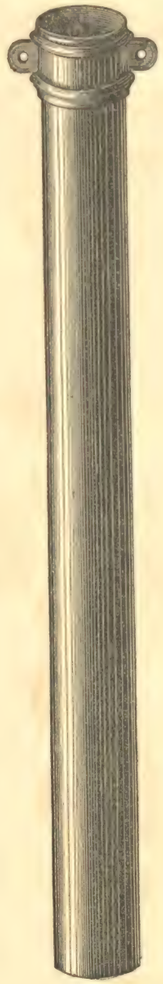


MACFARLANE'S PATENT.

No. 1 ROUND RAIN WATER, STOVE, OR SOIL PIPES, in 2, 3, 4, and 6 feet lengths.

No. 1 PIPE.

No. 1 PIPE, with Flat Ear.



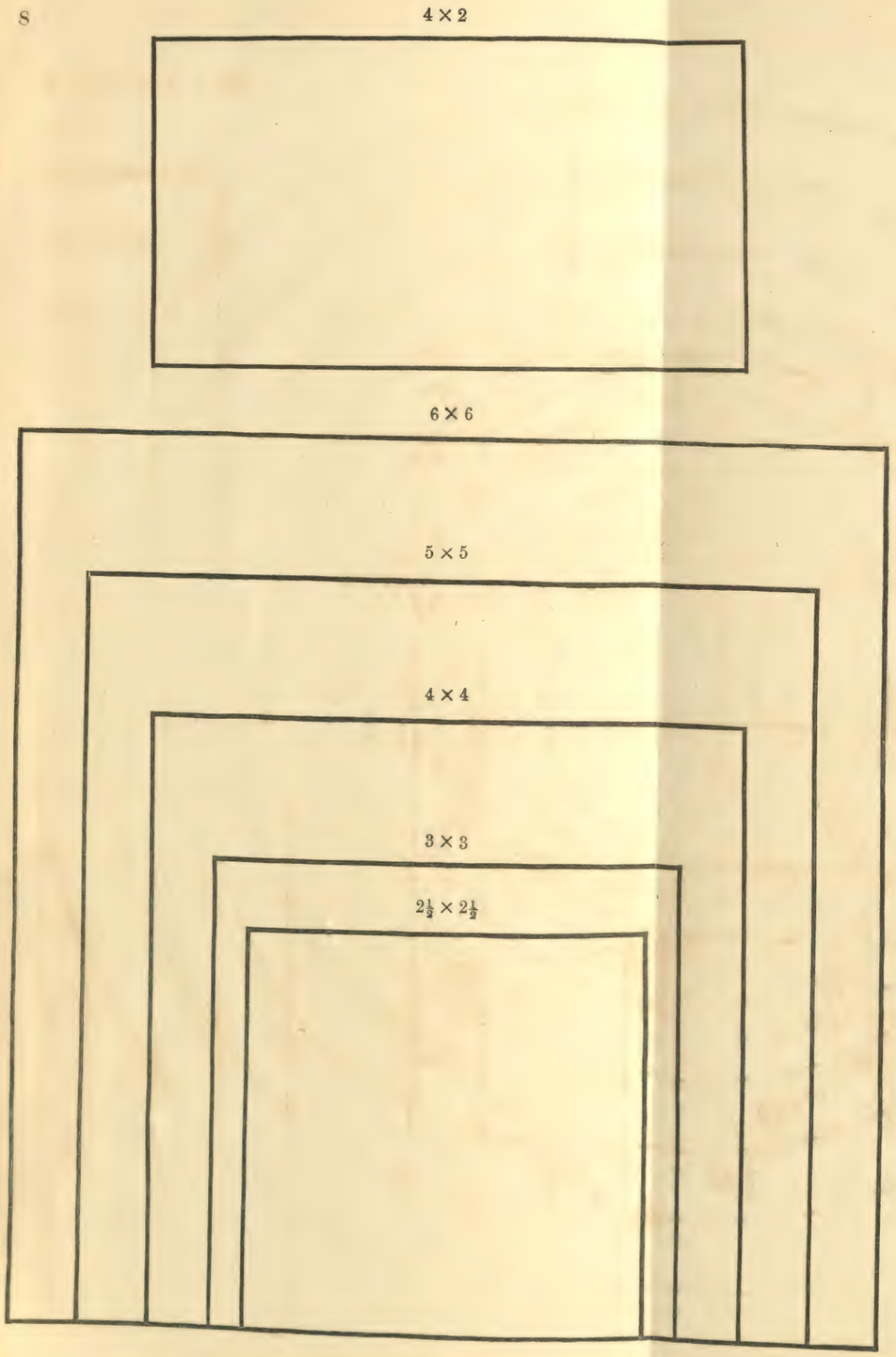
No. 1 PIPE with Corner Ear.

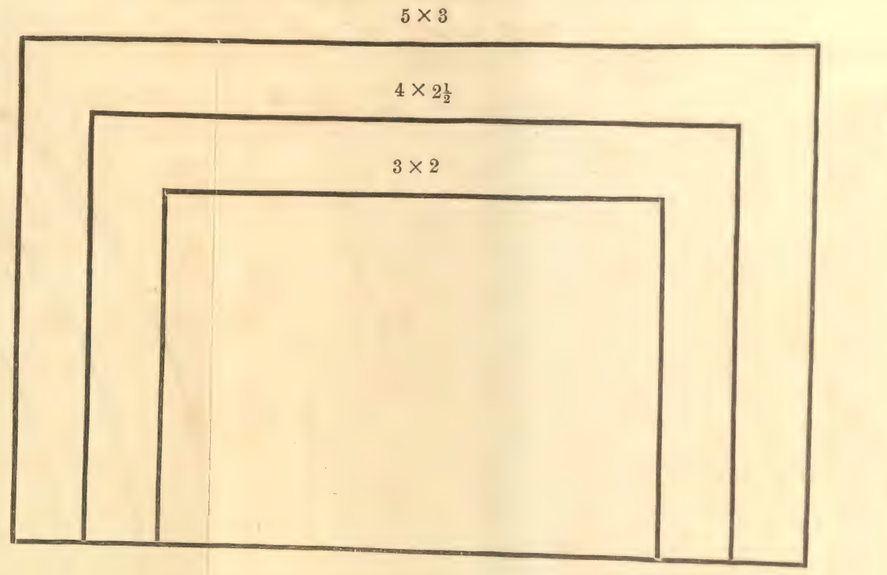
2, 2½, 3, 3½, 4, 4½, 5, 6, 7, and 8 inches diameter.

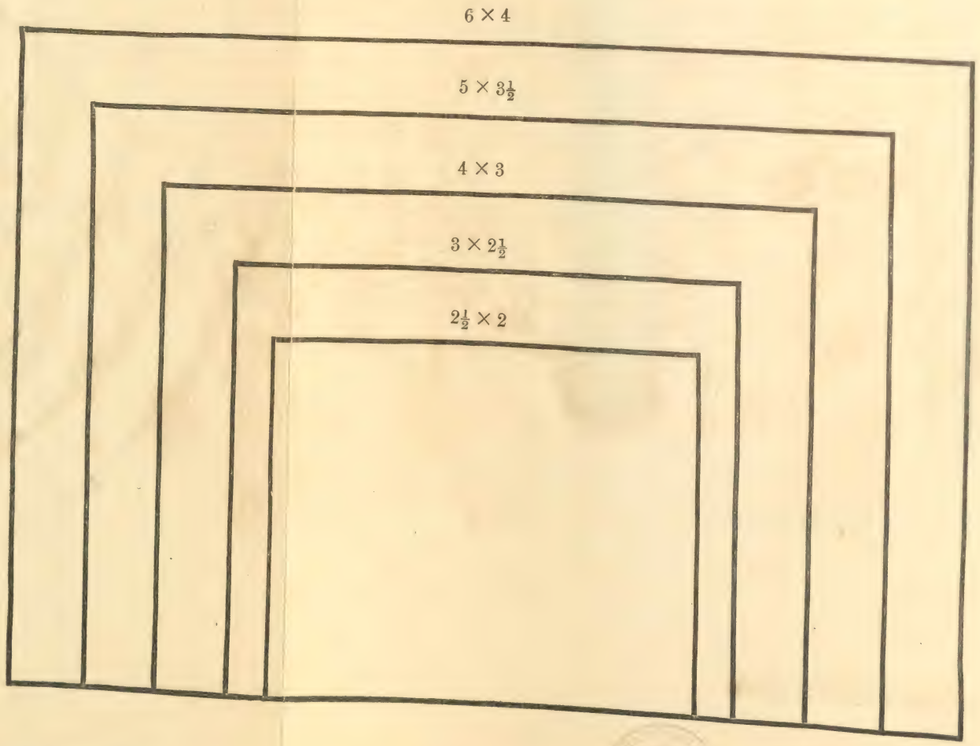
Scale of Drawings, 1 inch—1 foot.

Sections of Pipe Body—outside measure.

No. 2 SQUARE RAIN WATER PIPES, in 2, 3, 4, and 6 feet lengths.







Sections of Pipe Body—outside measure.

No. 2 PIPE, with Flat Ear.

No. 2 PIPE, with Corner Ear.

$2\frac{1}{2} \times 2$ and $2\frac{1}{2} \times 2\frac{1}{2}$ inches.

$3 \times 2\frac{1}{2}$ and 3×3 inches.

4×3 and 4×4 inches.

$5 \times 3\frac{1}{2}$ and 5×5 inches.

6×4 and 6×6 inches.

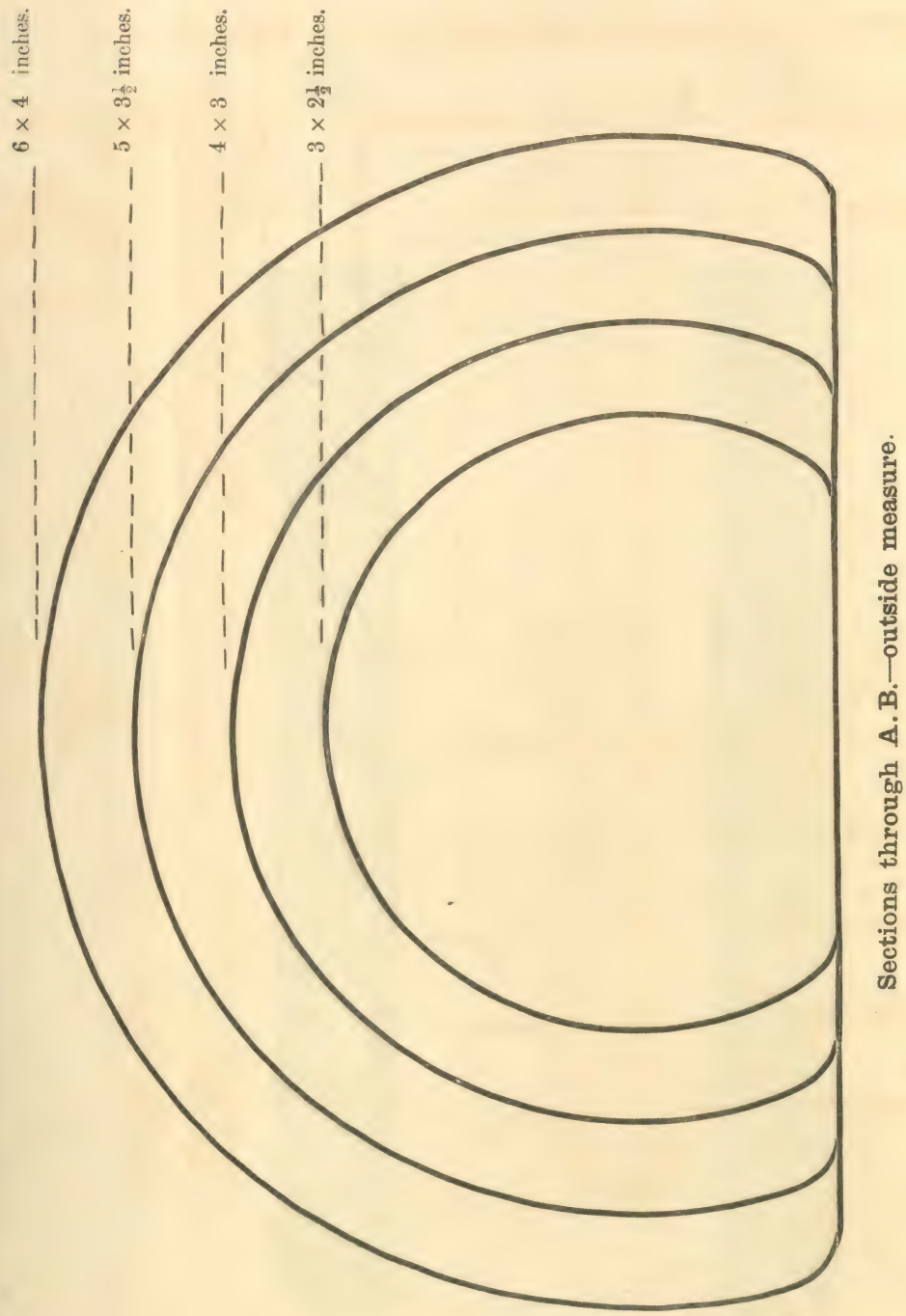
We also make to order the following Sizes:—

3×2, 4×2, $4 \times 2\frac{1}{2}$, and 5×3 inches.

Scale of Drawings, 1 inch—1 foot

No. 3 RAIN WATER PIPES.

$3 \times 2\frac{1}{2}$, 4×3, $5 \times 3\frac{1}{2}$, and 6×4 inches.

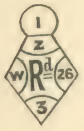


Sections through A. B.—outside measure.

Scale, $1\frac{1}{2}$ inch—1 foot.

MACFARLANE'S PATENT.

ORNAMENTAL RAIN WATER PIPES, in 2, 3, 4, and 6 feet Lengths.



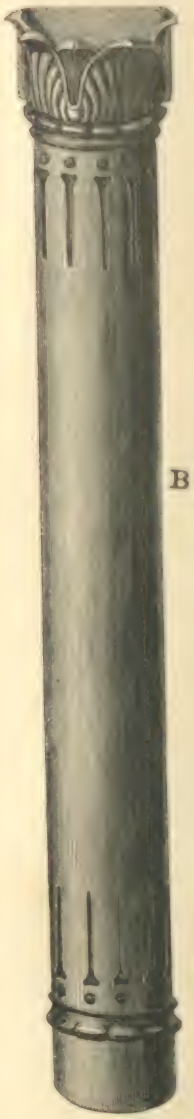
No. 4.

4 × 3, 5 × 3½, and
6 × 4 inches.

No. 6.

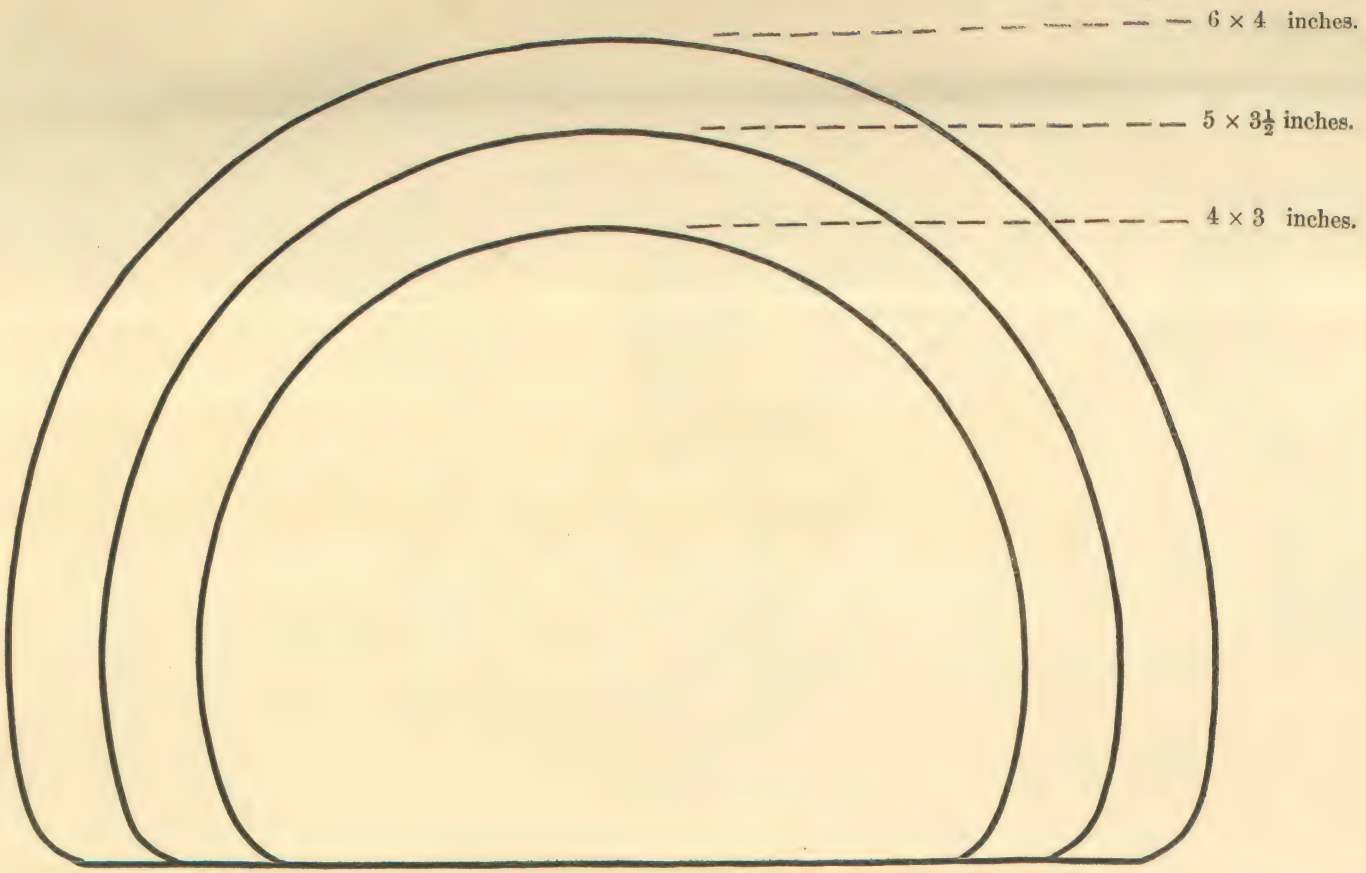
4 × 3, 5 × 3½, and
6 × 4 inches.

No. 7.



4 × 3, 5 × 3½, and
6 × 4 inches.

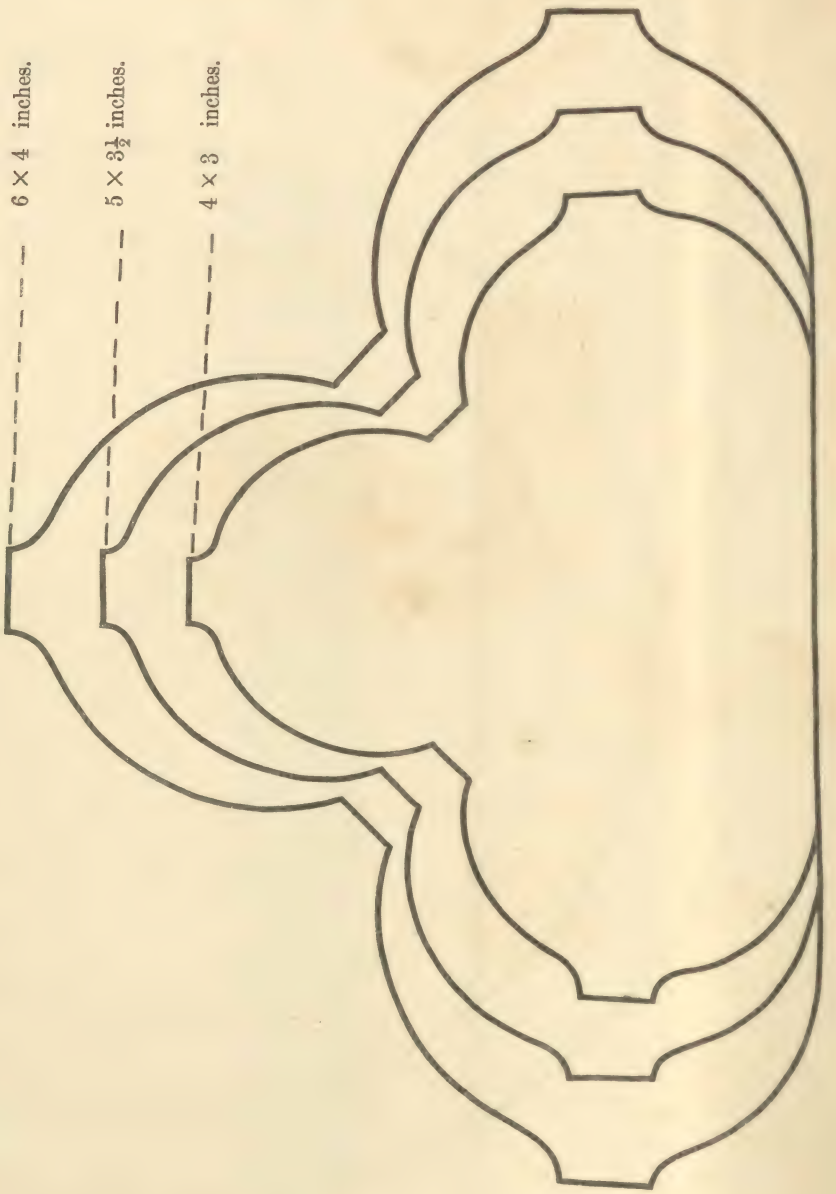
Scale, 1½ inch—1 foot.



Section of Nos. 4, 6, and 7 Pipe through A. B.—outside measure.

MACFARLANE'S PATENT.

No. 5 RAIN WATER PIPES.



Sections through A. B.—outside measure.

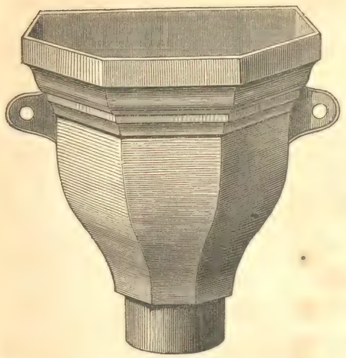
4 × 3, 5 × 3½, and 6 × 4 inches.

Scale, 1½ inch—1 foot.

MACFARLANE'S PATENT

No. 1 RAIN WATER PIPE CONNECTIONS.

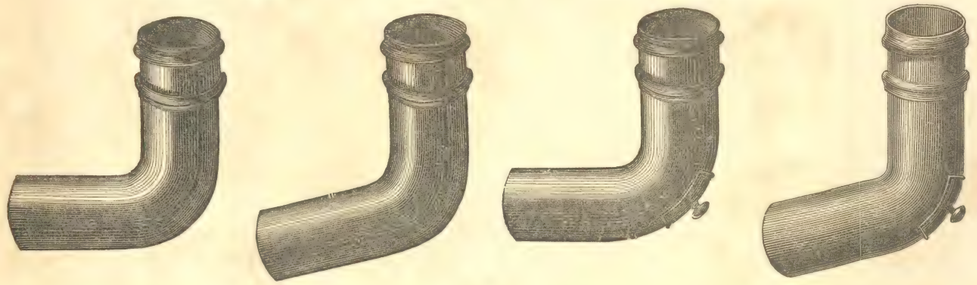
No. 1 HEAD, Flat.



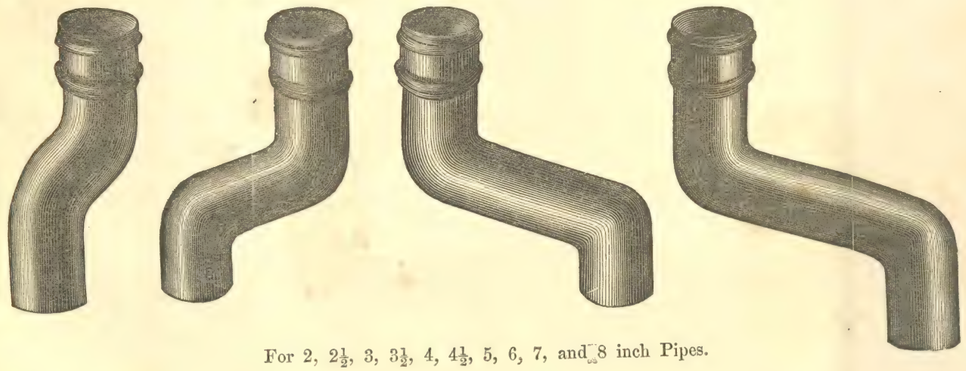
This pattern of Head is only made for the following sizes of No. 1 Round Pipes:—2, 2½, 3, 3½, 4, 4½, 5 and 6 inches, and can be had either for flat walls or for corners.

Besides the various kinds of Elbows, Offsets, &c., shown in our Catalogue, we can make them to suit any projection of cornice or plinth *to order*.

ELBOW. **OBTUSE ELBOW.** **ELBOW with Cleaning Door.** **OBTUSE ELBOW with Cleaning Door.**



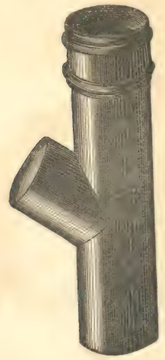
3 inch OFFSET. **6 inch OFFSET.** **9 inch OFFSET.** **12 inch OFFSET**



For 2, 2½, 3, 3½, 4, 4½, 5, 6, 7, and 8 inch Pipes.

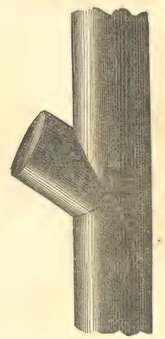
Scale, 2 inch—1 foot.

Single BRANCH PIECE.



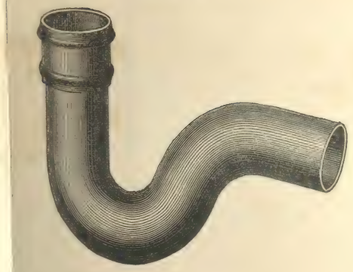
Double BRANCH PIECE.

BRANCH cast on.

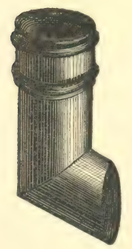


One or more Branches, of any given size, can be cast on any part of the pipe *to order*.

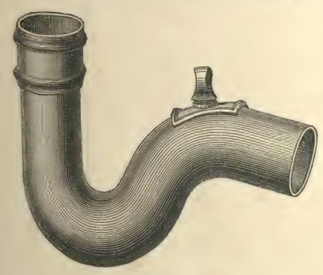
SYPHON TRAP.



SHOE.



SYPHON TRAP, with Cleaning Door.



BOOT.

UNION SOCKET. **SPIKE for Ear.** **HOLDFAST**

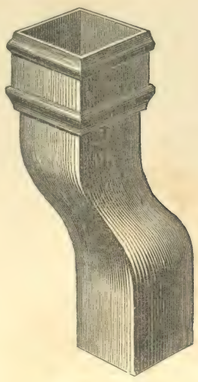
For 2, 2½, 3, 3½, 4, 4½, 5, 6, 7, and 8 inch Pipes.

Scale, 2 inch—1 foot.

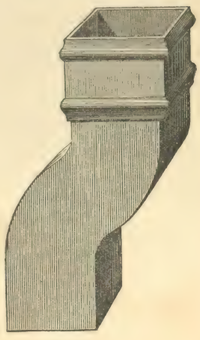
No. 2 RAIN WATER PIPE CONNECTIONS.

3 inch Front OFFSET.

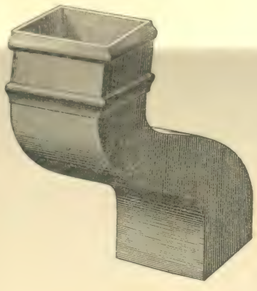
3 inch Corner OFFSET.



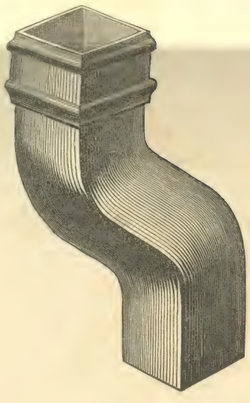
3 inch Side OFFSET.



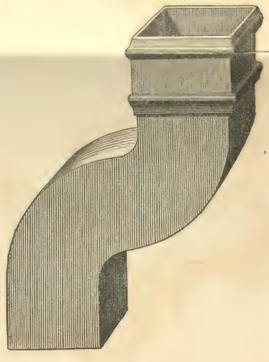
6 inch Front OFFSET.



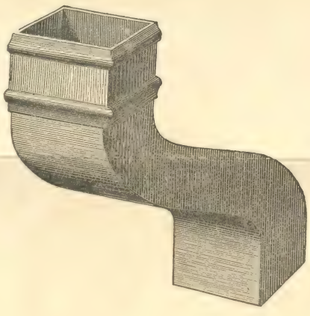
6 inch Corner OFFSET.



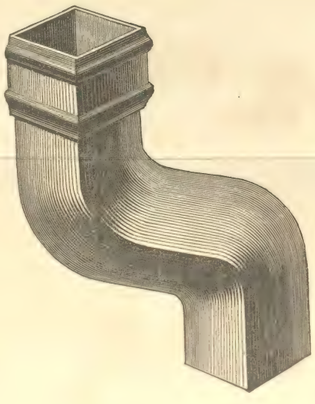
6 inch Side OFFSET.



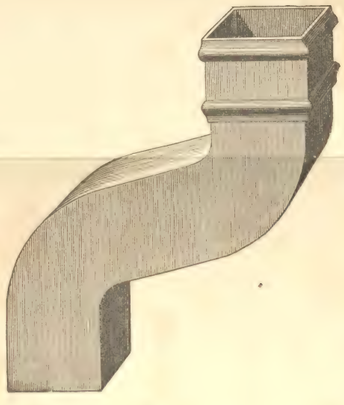
9 inch Front OFFSET.



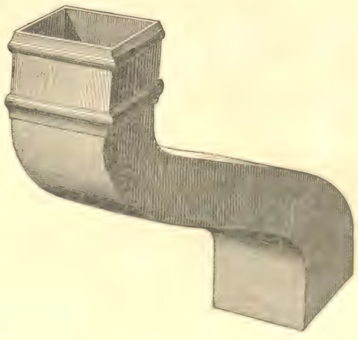
9 inch Corner OFFSET.



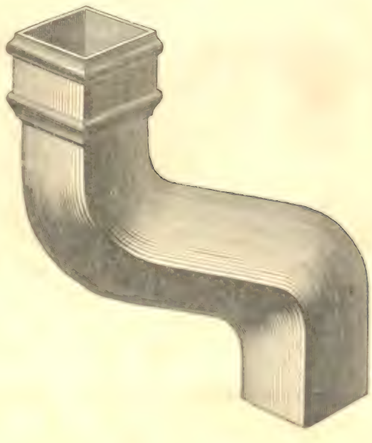
9 inch Side OFFSET.



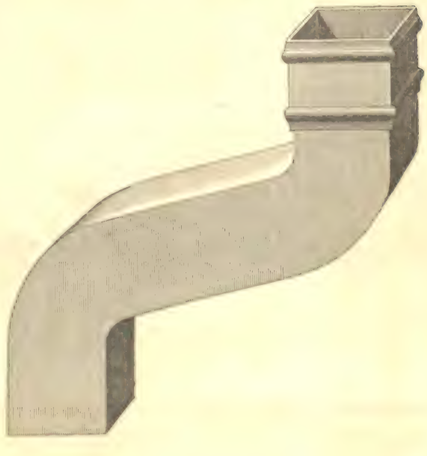
12 inch Front OFFSET.



12 inch Corner OFFSET.



12 inch Side OFFSET.



For $2\frac{1}{2} \times 2$, $2\frac{1}{2} \times 2\frac{1}{2}$, 3×2, $3 \times 2\frac{1}{2}$, 3×3, 4×2, $4 \times 2\frac{1}{2}$, 4×3, 4×4, 5×3, $5 \times 3\frac{1}{2}$, 5×5, 6×4, and 6×6 inch Pipes.

We also make, *to order*, Offsets to suit any given Angle, and of any length, and for any Size of Pipe.

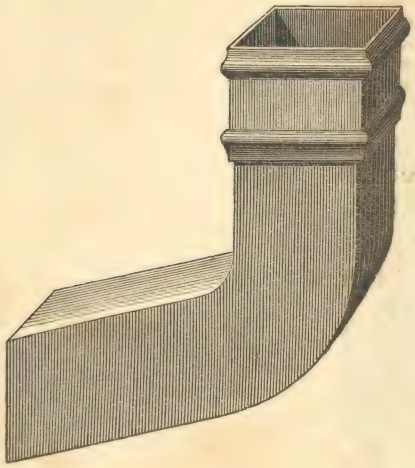
The Corner Offsets are only made for $2\frac{1}{2} \times 2\frac{1}{2}$, 3×3, 4×4, 5×5, and 6×6 inch Pipes.

Scale, 2 inch=1 foot

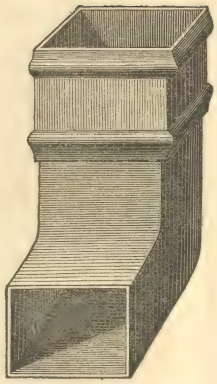
No. 2 RAIN WATER PIPE CONNECTIONS.

nt OBTUSE ELBOW.

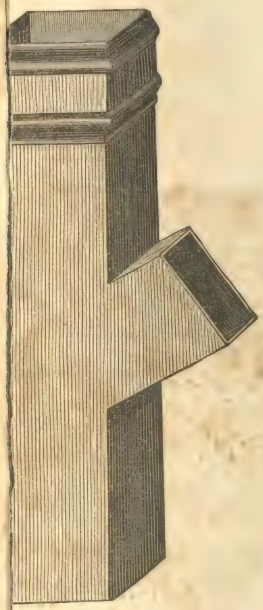
Side OBTUSE ELBOW.



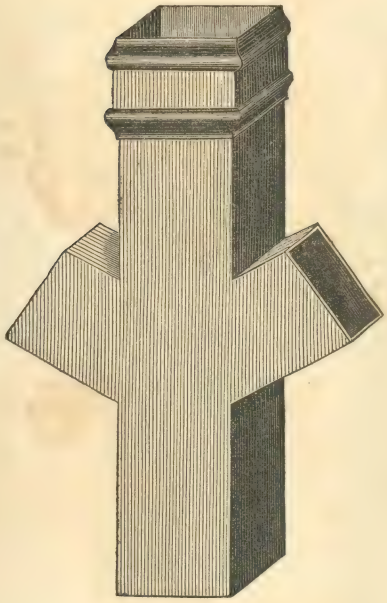
SHOE.



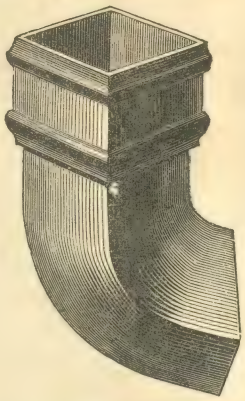
gle BRANCH PIECE.



Double BRANCH PIECE.

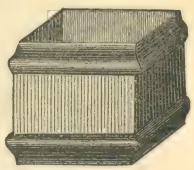


Corner SHOE.



This Corner Shoe is only made for $2\frac{1}{2} \times 2\frac{1}{2}$, 3×3, 4×4, 5×5, and 6×6 inch Pipes.

UNION SOCKET.



$2\frac{1}{2} \times 2$, $2\frac{1}{2} \times 2\frac{1}{2}$, 3×2, $3 \times 2\frac{1}{2}$, 3×3, 4×2, $4 \times 2\frac{1}{2}$, 4×3, 4×4, 5×3, $5 \times 3\frac{1}{2}$, 5×5, 6×4, and 6×6 inch Pipes.

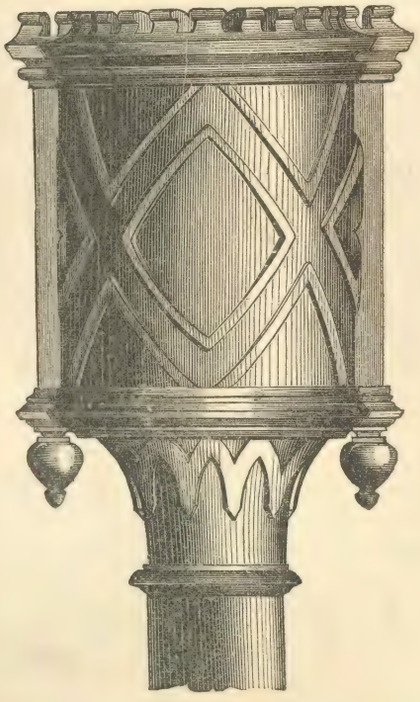
Scale, 2 inch—1 foot.

Note:—We make for the No. 3 Pipe all the Connections that we have shown for the No. 2 Pipe.

RAIN WATER PIPE HEADS.

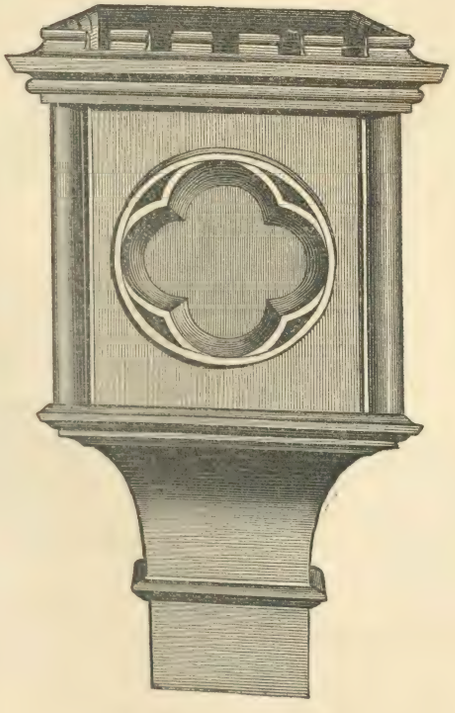
Any of the Heads, here illustrated, can be supplied for either flat walls, or for angle corners; an a proportionate size for every pattern and size of Pipe in our Catalogue.

No. 2 HEAD.

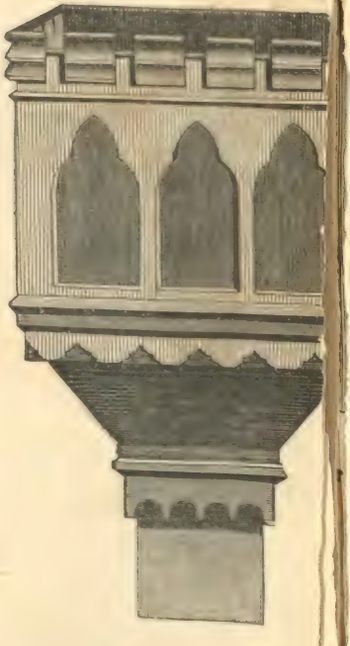


No. 3 HEAD.

No. 4 HEAD.



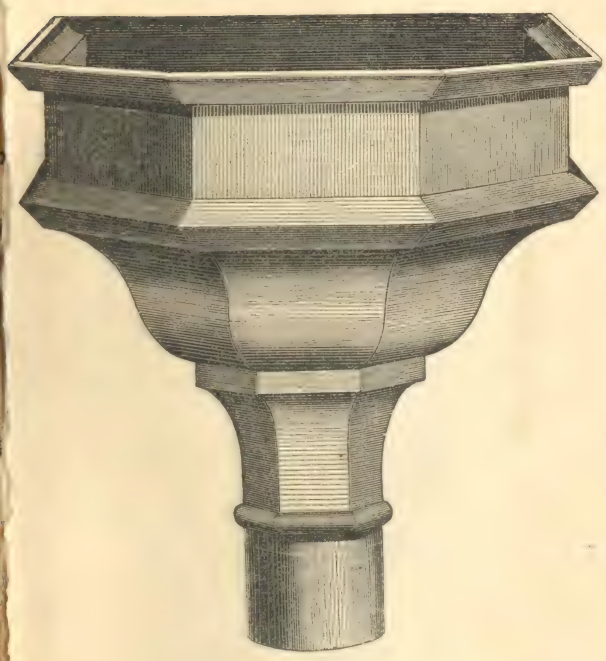
No. 5 HEAD.



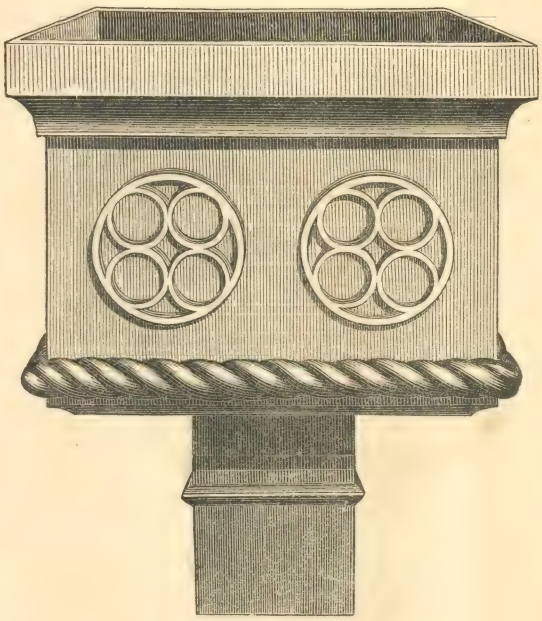
Scale, 2 inch—1 foot.

RAIN WATER PIPE HEADS.

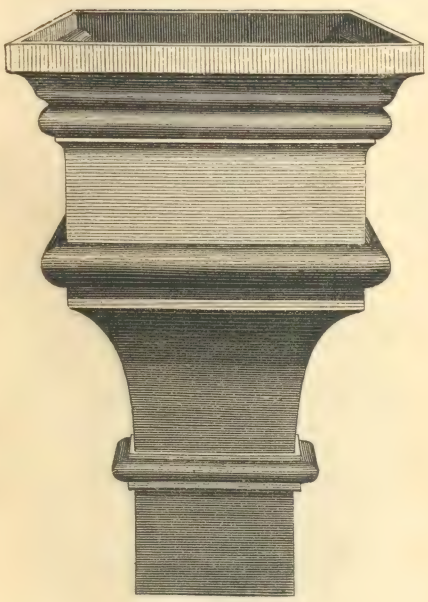
No. 6 HEAD.



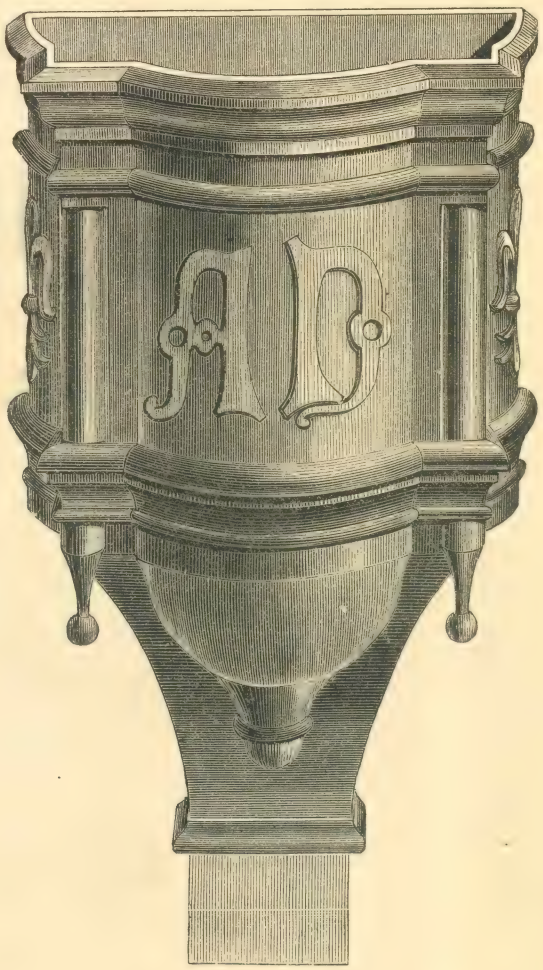
No. 7 HEAD



No. 8 HEAD.



No 9 HEAD.

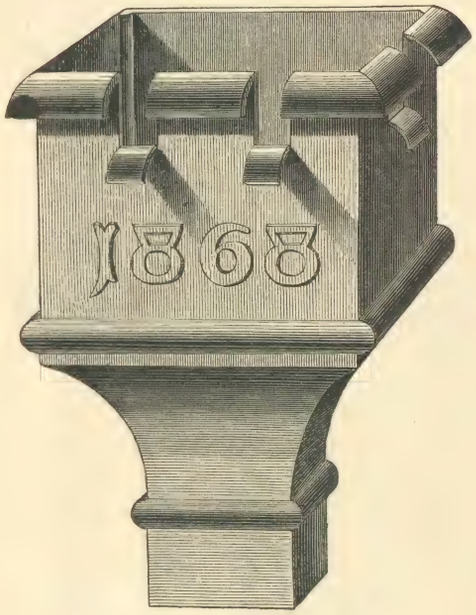


Scale, 2 inch—1 foot.

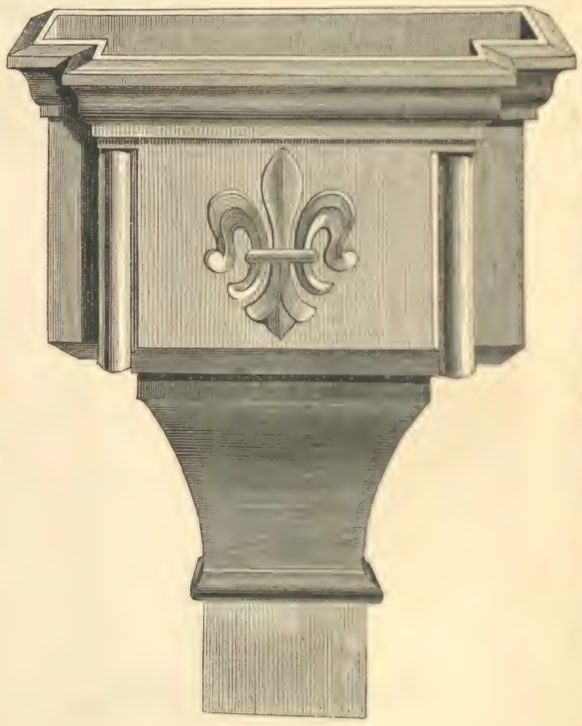
MACFARLANE'S PATENT.

RAIN WATER PIPE HEADS.

No. 10 HEAD.



No. 11 HEAD.



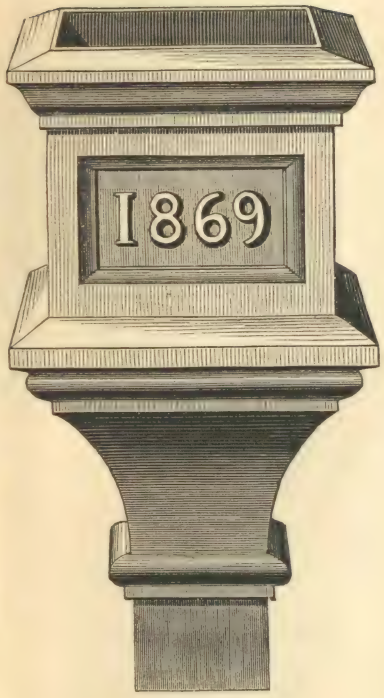
No. 12 HEAD.

No. 13 HEAD.

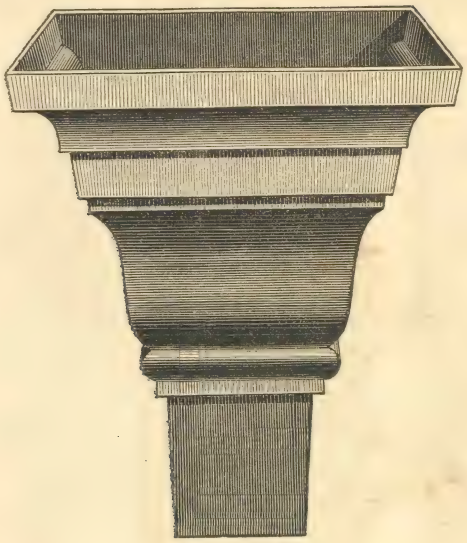
Scale, 2 inch—1 foot.

RAIN WATER PIPE HEADS.

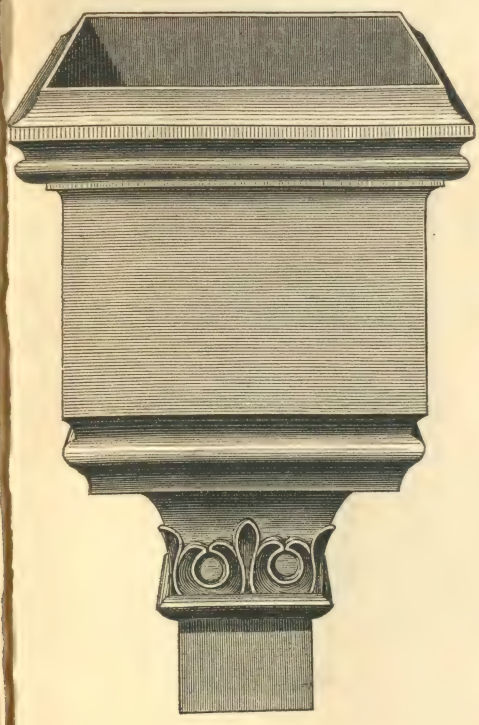
No. 14 HEAD.



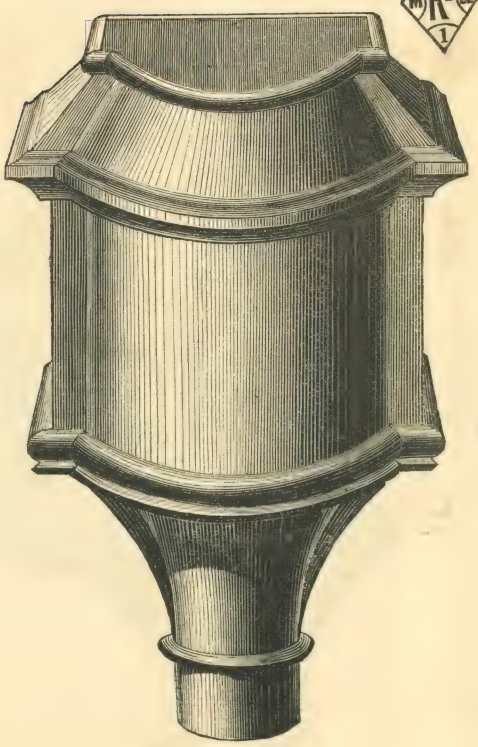
No. 16 HEAD.



No. 17 HEAD.



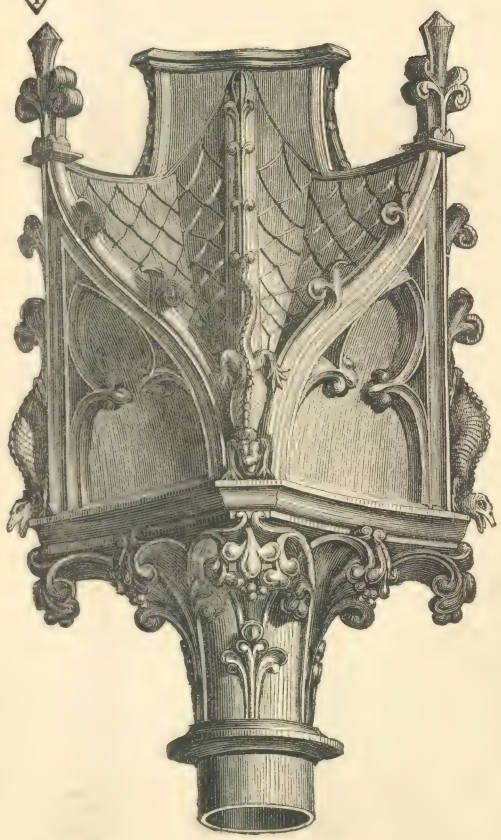
No. 18 HEAD.



Scale, 2 inch—1 foot.

RAIN WATER PIPE HEADS.

No. 19 HEAD.



No. 20 HEAD.

No. 21 HEAD.

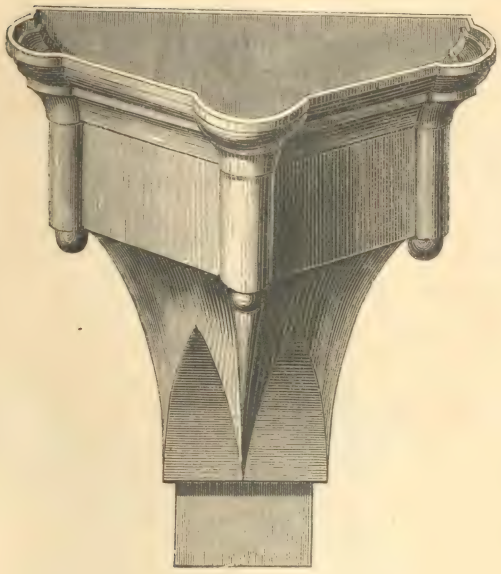
No. 22 HEAD.

Scale, 2 inch—1 foot.

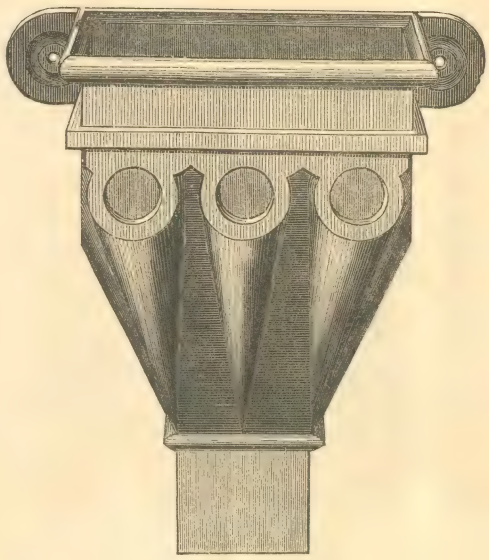
MACFARLANE'S PATENT.

RAIN WATER PIPE HEADS.

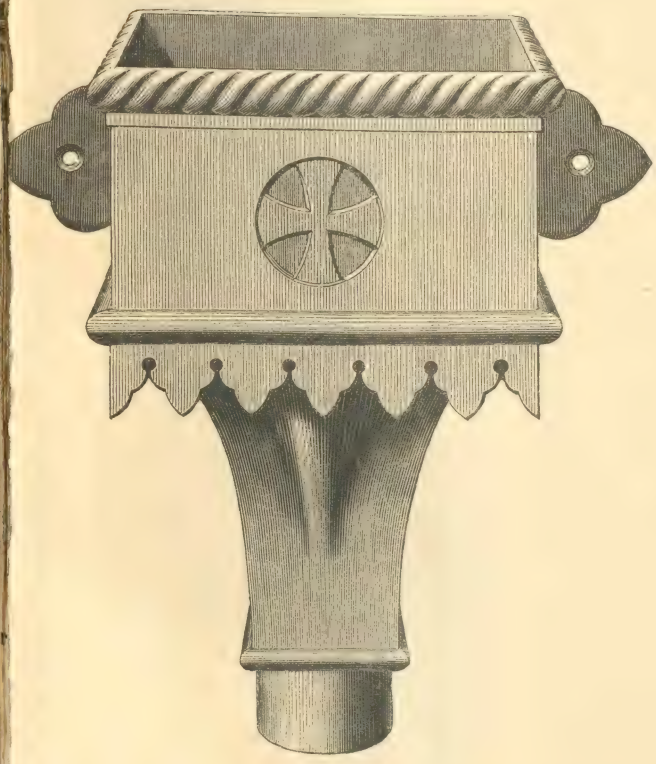
No. 15 HEAD.



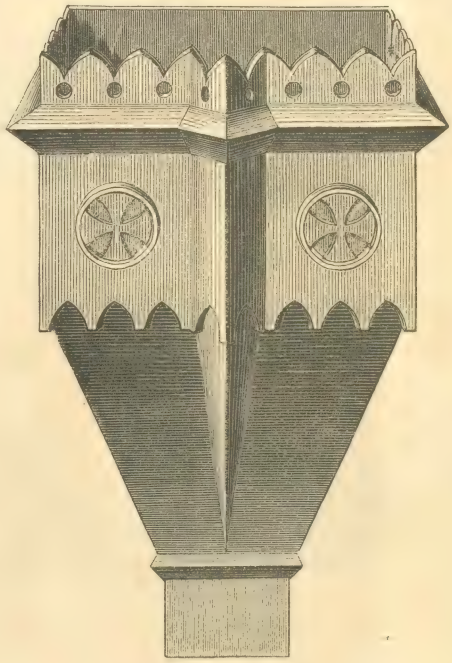
No. 23 HEAD.



No. 24 HEAD.



No. 25 HEAD.

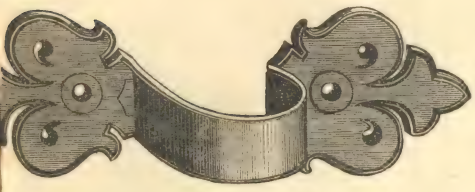


Scale, 2 inch—1 foot.

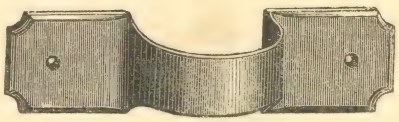
RAIN WATER PIPE EARS.

ORNAMENTAL EARS are made for flat walls and for corners, and to fit every pattern and size of Pipe Catalogue. When they are for Nos. 4, 5, 6, and 7 Ornamental Pipes, the belt is dispensed with, and tail and socket joins the wing to each side of the Pipe.

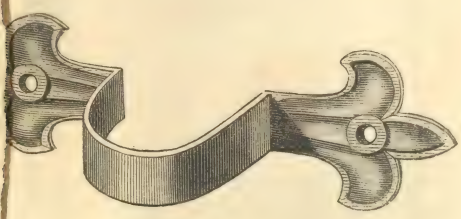
No. 2 EAR.



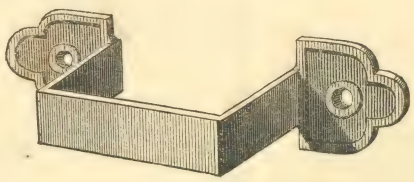
No. 3 EAR.



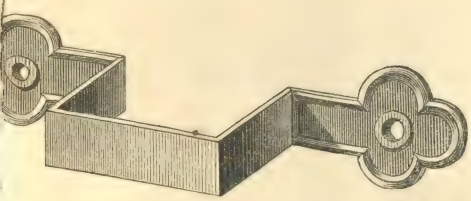
No. 4 EAR.



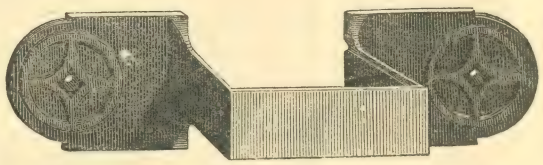
No. 5 EAR.



No. 6 EAR.



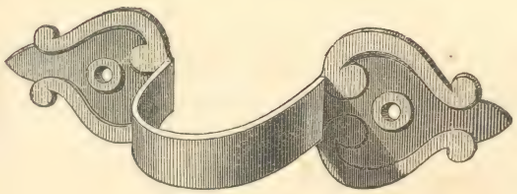
No. 7 EAR.



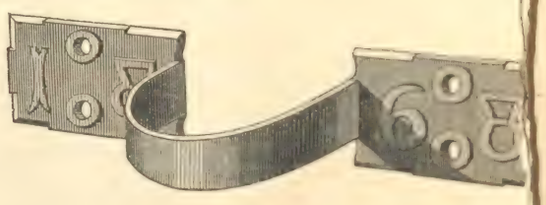
Scale, 2 inch—1 foot.

RAIN WATER PIPE EARS.

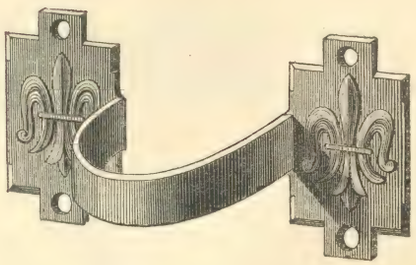
No. 8 EAR.



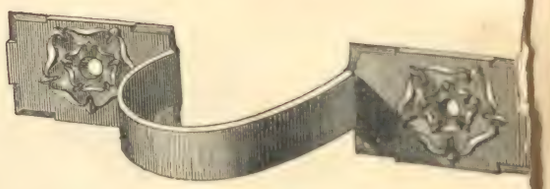
No. 9 EAR.



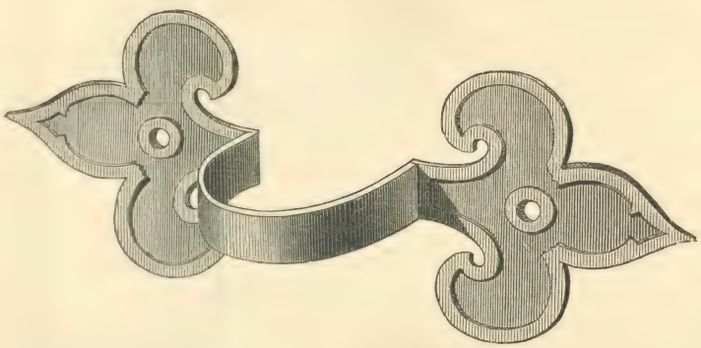
No. 10 EAR.



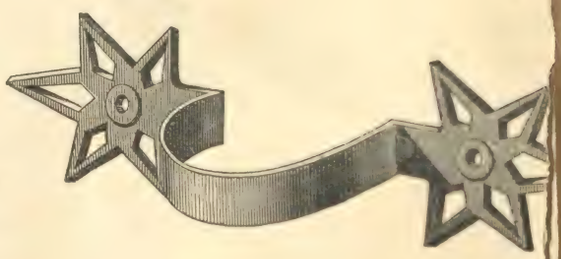
No. 11 EAR.



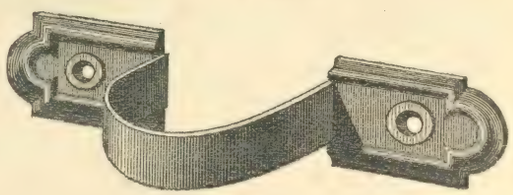
No. 12 EAR.



No. 13 EAR.



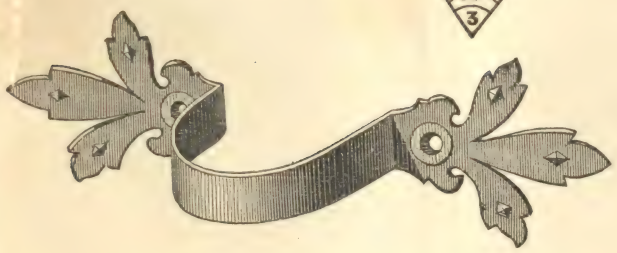
No. 14 EAR.



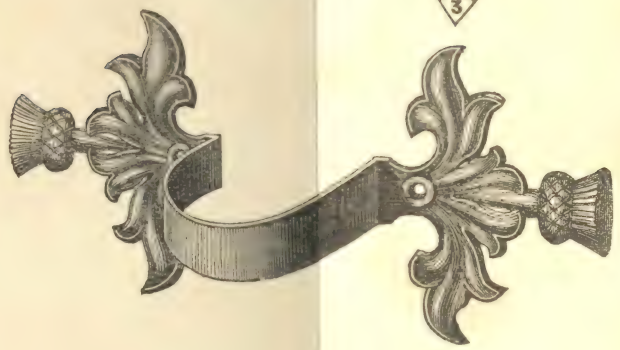
Scale, 2 inch—1 foot.

RAIN WATER PIPE EARS.

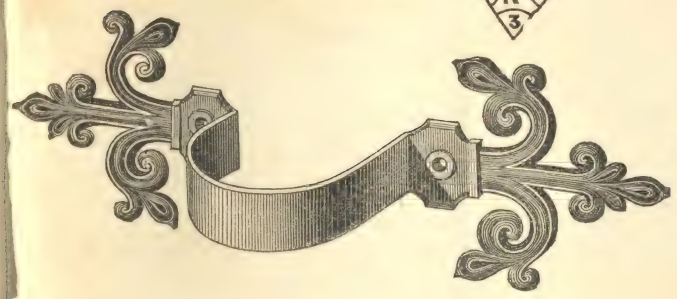
No. 15 EAR.



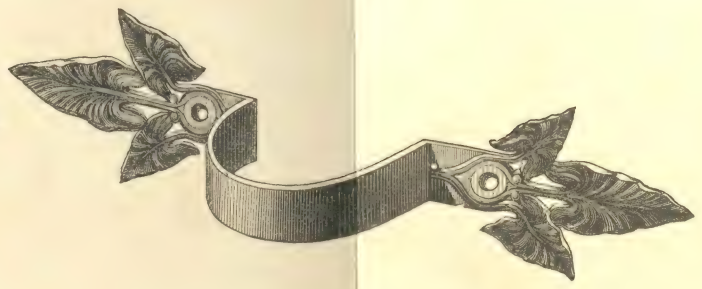
No. 16 EAR.



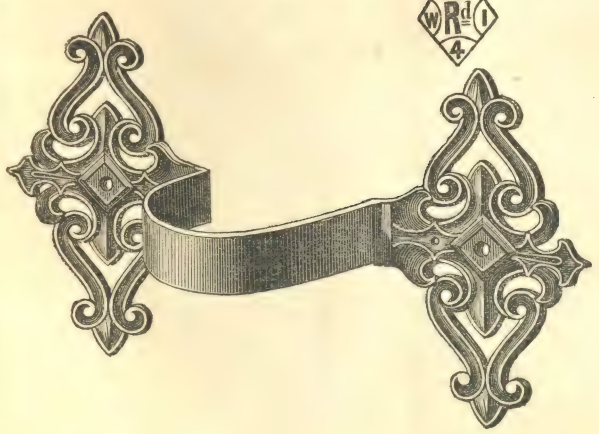
No. 19 EAR.



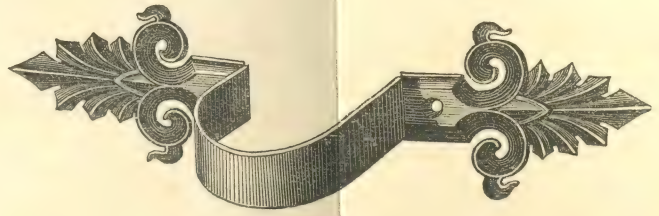
No. 20 EAR.



No. 21 EAR.



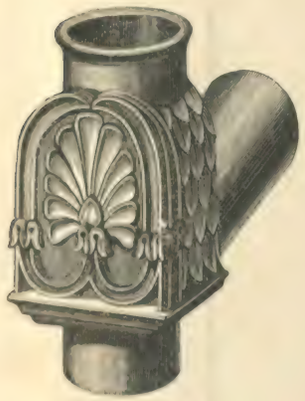
No. 22 EAR.



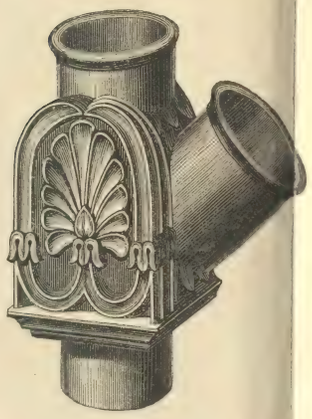
Scale, 2 inch—1 foot.

MACFARLANE'S PATENT ORNAMENTAL RAIN WATER PIPE CONNECTIONS.

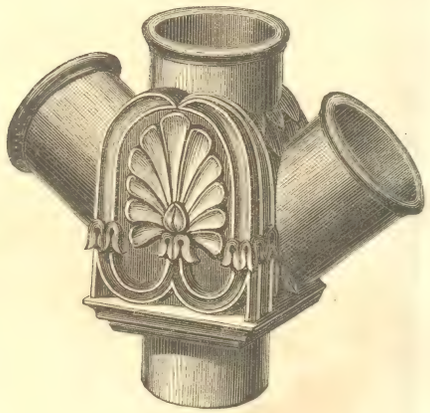
No. 4 Back BRANCH.



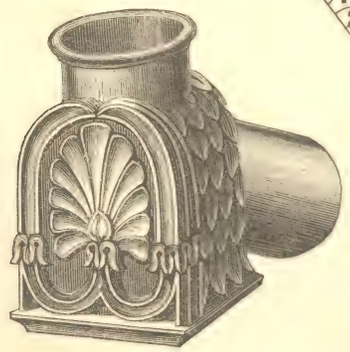
No. 4 Single BRANCH.



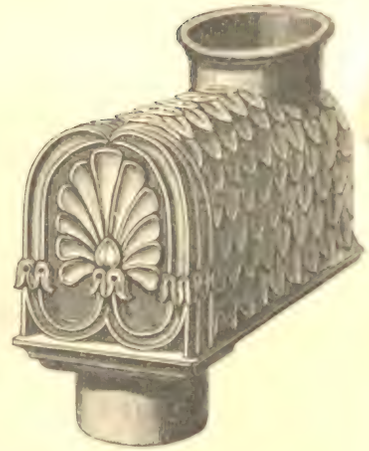
No. 4 Double BRANCH.



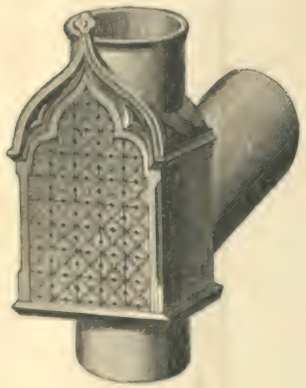
No. 4 OBTUSE ELBOW.



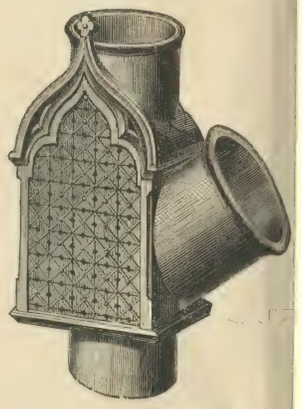
No. 4 OFFSET.



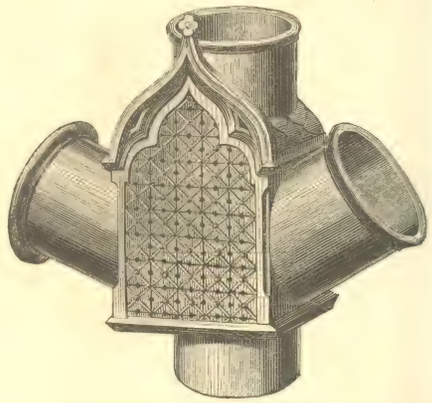
No. 5 Back BRANCH.



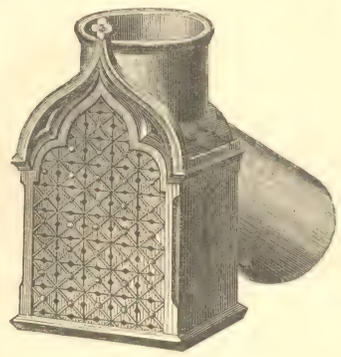
No. 5 Single BRANCH.



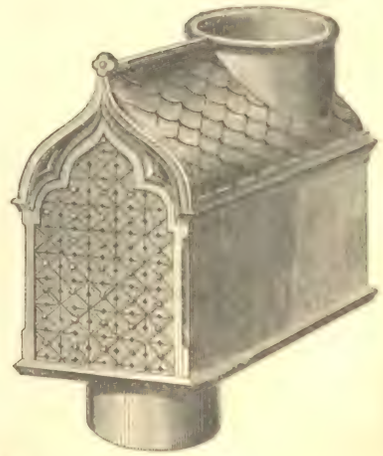
No. 5 Double BRANCH.



No. 5 OBTUSE ELBOW.



No. 5 OFFSET.



MONOGRAM.

CREST.

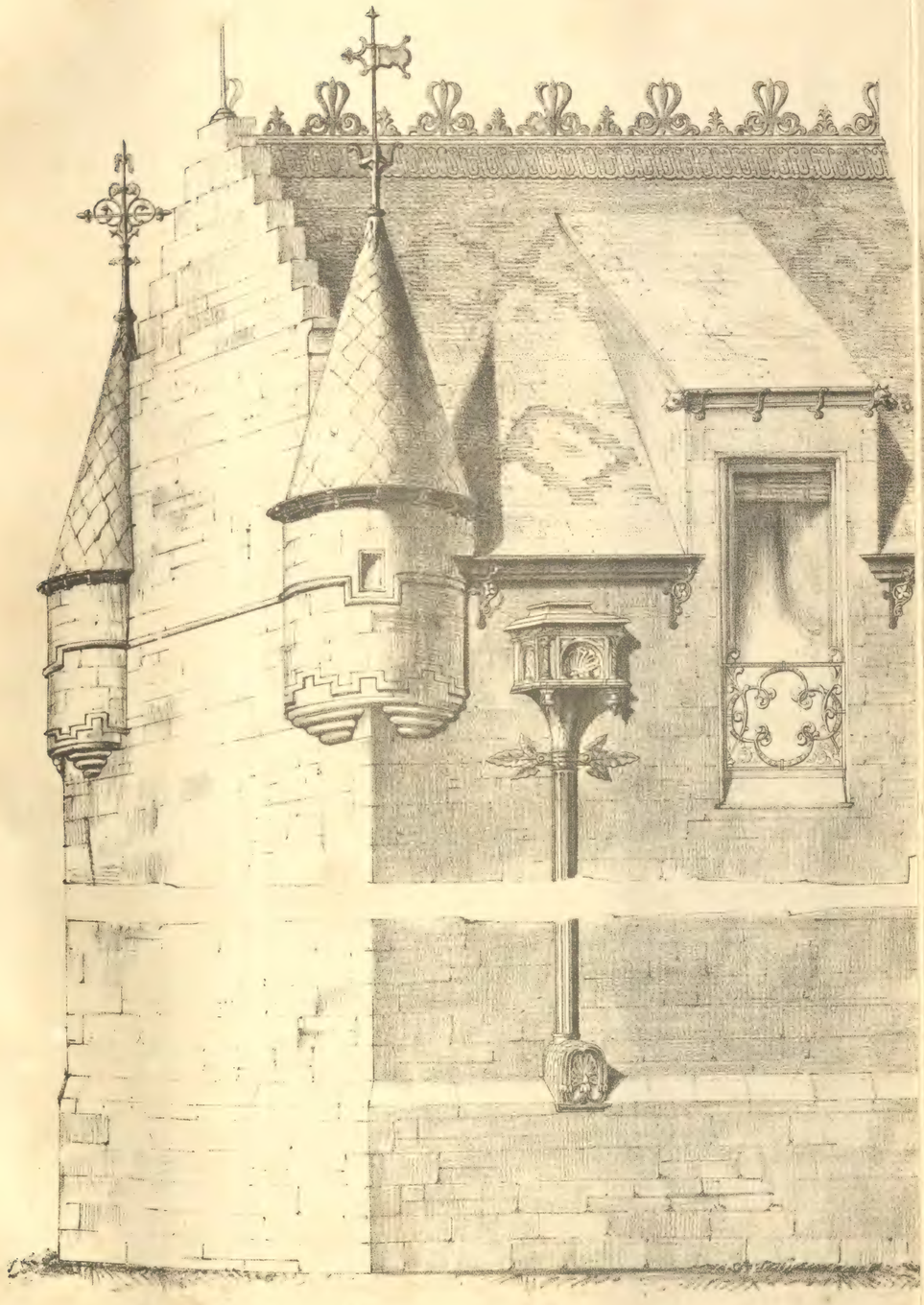
Crests, Monograms, Dates, &c., can be cast on any of our appliances to order.

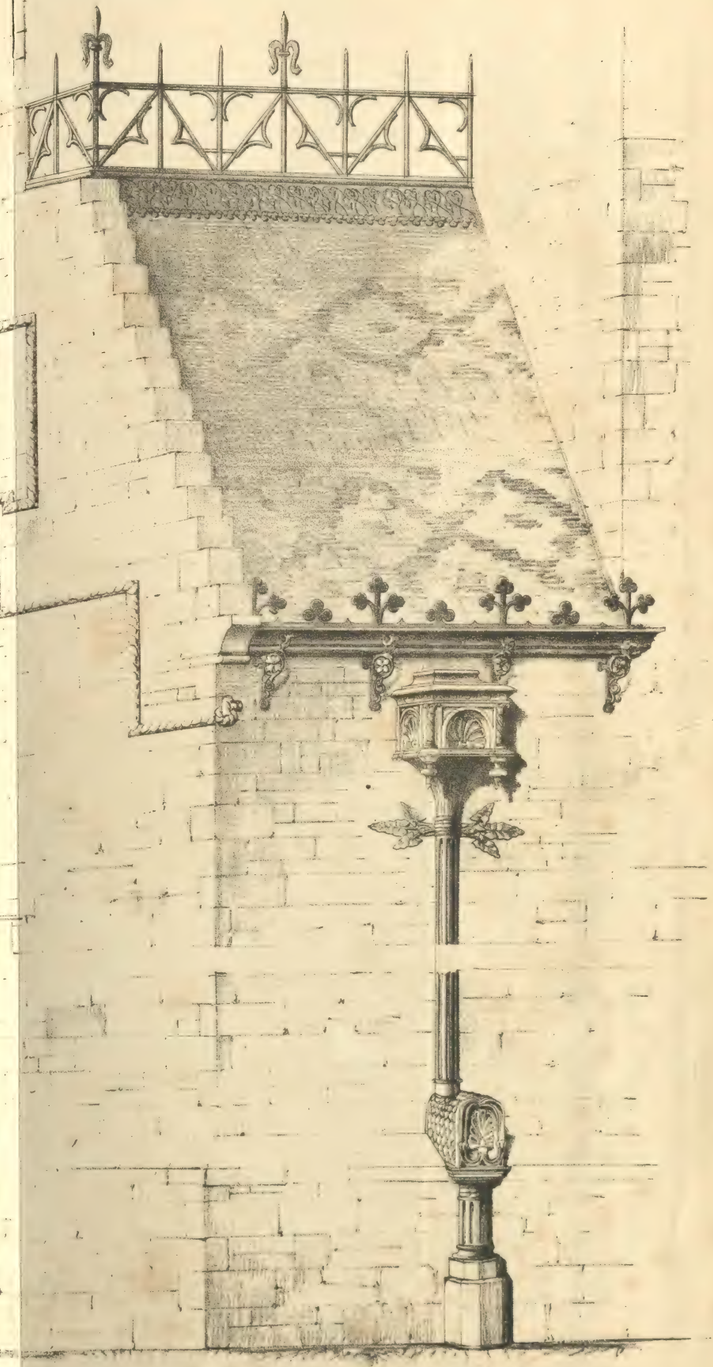
No. 5 PEDESTAL.

PEDESTAL.—We have introduced this new rain water pipe connection for the purpose of making a proper junction between the conductor pipe and the underground drains, and by thus connecting them, providing the best means of ventilating the sewers by carrying their heated vapours over the house tops.

We can supply No. 4 and 5 Offset for any projection of plinth, and any of the connections on this page of a proportionate size for every pattern and size of Pipe in our Catalogue.

Scale, 2 inch—1 foot.





MACFARLANE'S EXAMPLES, *showing various modes of applying Pipes, &c., to Buildings.*

PART II.

RAIN WATER GUTTERS.

The growing importance of this branch of trade has induced us to seek for simpler and more pe methods of production than have hitherto been in use; and our labours in this direction have entirely cha the system of manufacture formerly pursued. We are now enabled to give a much greater variet designs, along with a sharp regularity of moulding, that not only enhances the appearance, but also considerably to the strength of our Gutters.

Half Round Gutters, pages 29 to 32, are generally used for the commonest class of buildings, and either be fitted up with hooks attached to the boarding, or supported on brackets attached to the wall.

O G Gutters, pages 33 to 36, are the simplest style of Gutter having a moulded front. In fi them up, they are generally attached to the wood work of the roof by means of screws passing through back of the Gutter.

Ornamental Gutters, pages 37 to 72½, are now very generally superseding the expensive stone or w cornice lined with lead. All our Ornamental Gutters (with the exception of No. 14,) are made with i faucets; thus giving to the eye an uninterrupted line of moulding.

Circular Gutters, pages 73 to 75. With the view of making our Gutter section as complete as pos we have introduced various patterns and sizes of circular gutters. We can supply them suitable for smallest turret, as well as the largest description of circular building. Our patterns of circular gu range with the corresponding Nos. of our other gutters, the same fittings being suitable for both kinds.

Boundary Wall Gutters, pages 76 to 81. This useful class of Gutters will be found admirably su for their purpose. The variety of patterns and sizes we make, adapts them to every requirement.

Gutter Angles, page 82. Besides the ordinary kinds, we make angles for any description of window, and for any particular angle *to order*, on being furnished with the size.

Ornamental Stop Ends, page 82. Every separate stretch of gutter should have this connection adds so much to the finished appearance of the gutter cornice.

Gutter Drop Pipes, page 83. These can be cast on any part of the gutter that may be most su for the down pipe. They are generally cast on the bottom of the gutter, but they can also be cast o back, or on the corner to order.

Gutter Gratings, page 83. These essential articles should be placed over every discharge drop for the purpose of preventing the down pipe getting choked.

GUTTER ORNAMENTS, pages 84 to 87. It is sometimes desirable to have Lion heads, or other ornaments, placed at certain distances on the front of the gutter cornice, and for this purpose we can attach such ornaments to any size and pattern of gutter we make. The distance between each of the ornaments should always be specified by the architect, that they may correspond with the design of the building. In such cases as Mansard roofs, &c., it may be preferable to discharge the rainfall from the gutter directly through those heads, on the roof below, without calling in the aid of pipes at all.

GUTTER SNOW GRATE, page 84. This new gutter connection has been introduced by us for the purpose of providing against a very common occurrence, namely, the gutter getting choked up with snow, and thereby causing the water to overflow its channel and soak through the building.

GUTTER BRACKETS, pages 88 to 90. With the view of providing every style of building with a suitable arrangement for properly fixing our gutters, we have introduced ornamental brackets. This mode of fixing is perhaps the most appropriate for Cast-Iron Gutters. It entirely dispenses with the necessity of resting the gutter on the top of the wall.

CENTRE GUTTERS FOR RIDGE AND FURROW ROOFS, pages 91 to 102. The advantages of cast-iron for these purposes are, perhaps, nowhere more evinced than in this description of gutter. Its expansion by variations of temperature is comparatively trifling, and being a hard impenetrable material, it is not easily injured by rough usage. It also binds and strengthens the whole roof, whilst its cheapness is perhaps not the least of its recommendations. The variety of patterns and sizes made by us adapts them for every description of building.

In order that the various details may be clearly laid down in the building plans, we give "real size sections," and when sections are not given each object is drawn to a scale, or the size itself is stated. We also give several illustrative sheets of drawings, showing various modes of applying our Gutters and their Connections to the building, see pages 37, 38, 91, 92, and 102.

Schedules, besides specifying the No. and size of the Gutter, should always state in detail the various Connections each stretch of Gutter is to be furnished with.

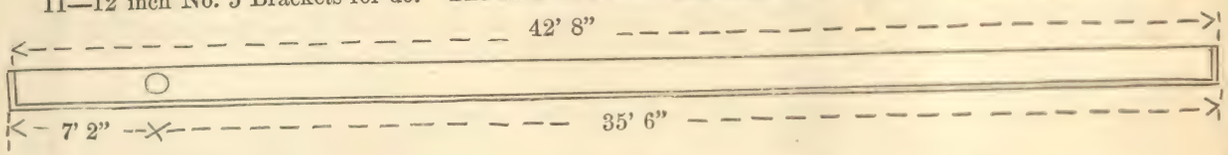
In ordering Gutters, our customers will please state the No. and size; and they may either order the required number of 6 feet lengths, along with the necessary quantity and description of angles, stop ends, &c., and cut them to suit the required buildings themselves—or by giving us a plan of the building, with the exact measurements, we will furnish them accordingly, all properly marked and ready for fitting up.

See page 28 for examples of the simplest method of giving Sizes, and ordering Gutters.

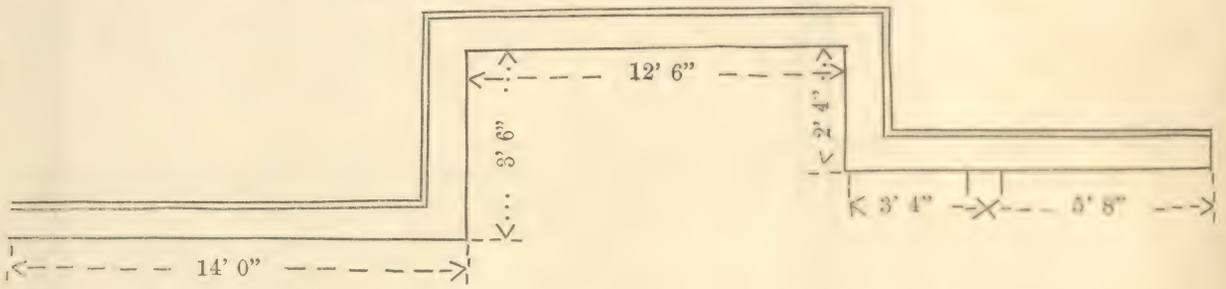
The following examples show the simplest method of ordering and giving measurements for Gutters when they are wanted cut to particular sizes:—

1 stretch of No. 8 Gutter 6 × 4½ inches, with ornamental stop ends and 3½ inch drop pipe and grating as sketch.

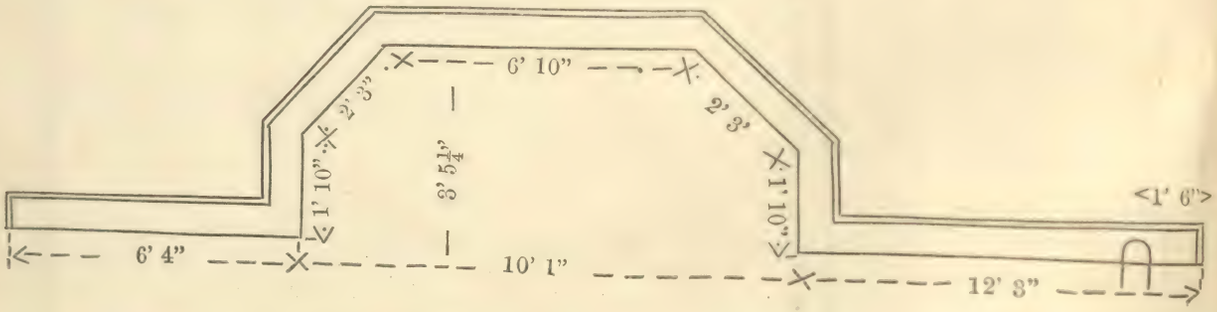
11—12 inch No. 5 Brackets for do. The back of Gutter and Brackets to be on the same line of wall.

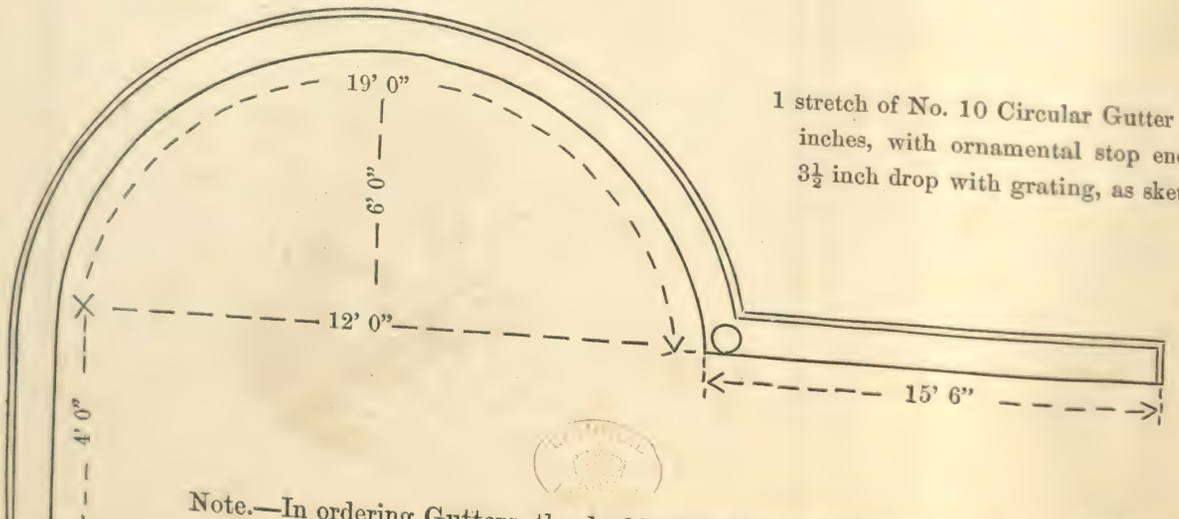


1 stretch of No. 8 Gutter 6 × 4½ inches, with No. 1 Lion's head every 3 feet, plain stop end, and 3½ inch drop pipe and grating at back of Gutter, as sketch.



1 stretch of No. 8 Gutter 6 × 4½ inches, with ornamental stop ends, and 3½ inch drop pipe and grating at corner, as sketch.



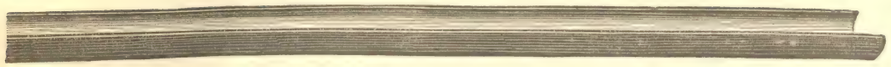


1 stretch of No. 10 Circular Gutter 6 × 4½ inches, with ornamental stop ends, and 3½ inch drop with grating, as sketch.

Note.—In ordering Gutters, the double line always indicates the front of the Gutter.

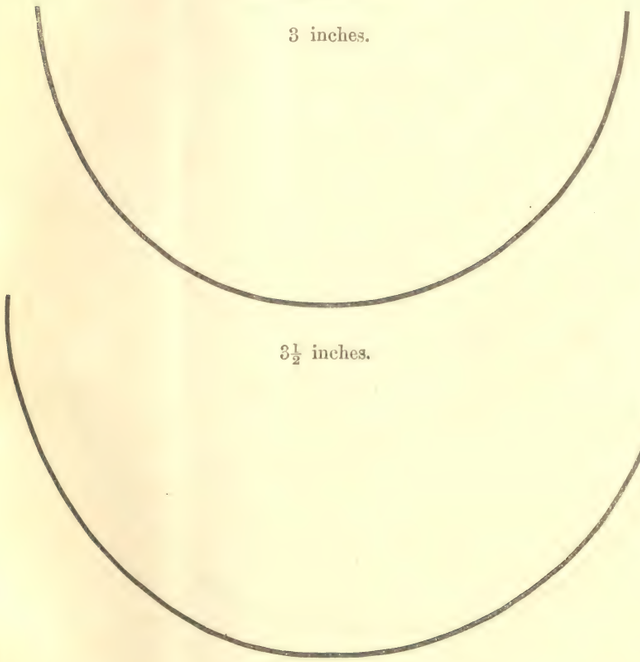
MACFARLANE'S PATENT.

No. 1 HALF-ROUND GUTTERS.

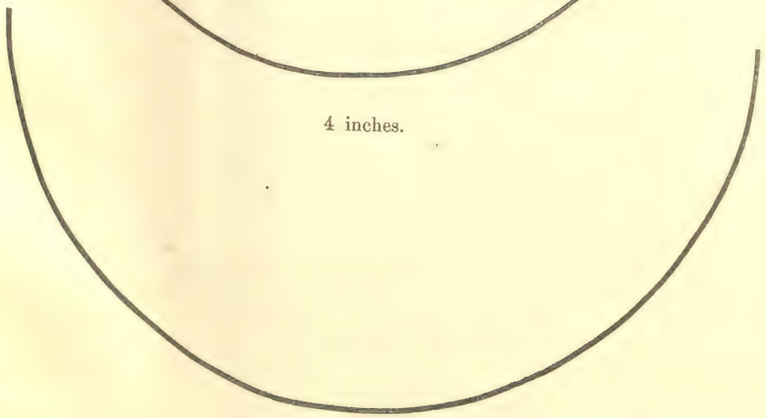


3, 3½, 4, 4½, 5, 6, 7, 8, 9 and 10 inches diameter.

3 inches.



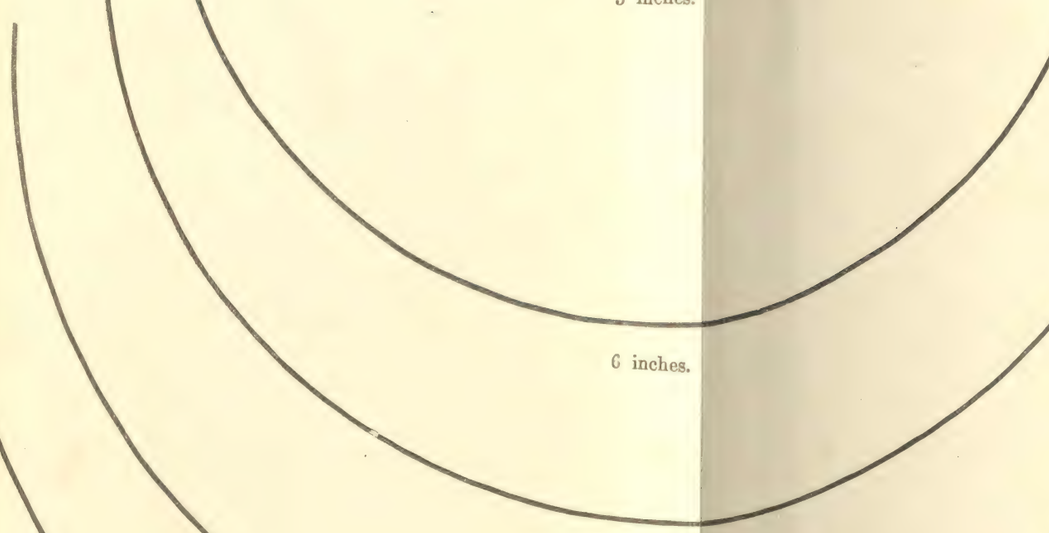
3½ inches.



4 inches.

4½ inches.

5 inches.



6 inches.

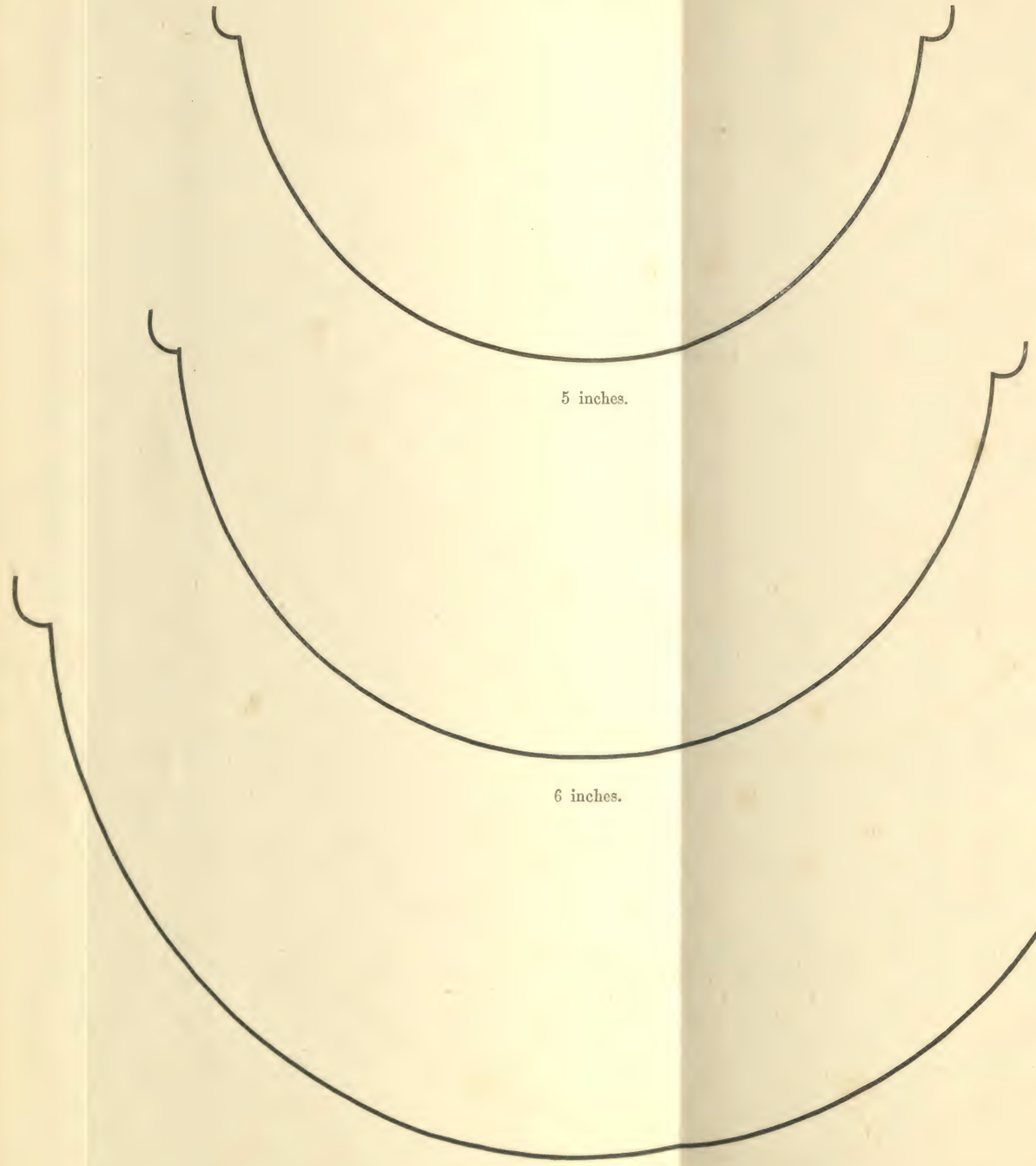
7 inches.

8 inches.

9 inches.

10 inches.

Sections real Size,—outside measure.



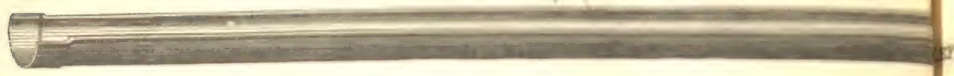
5 inches.

6 inches.

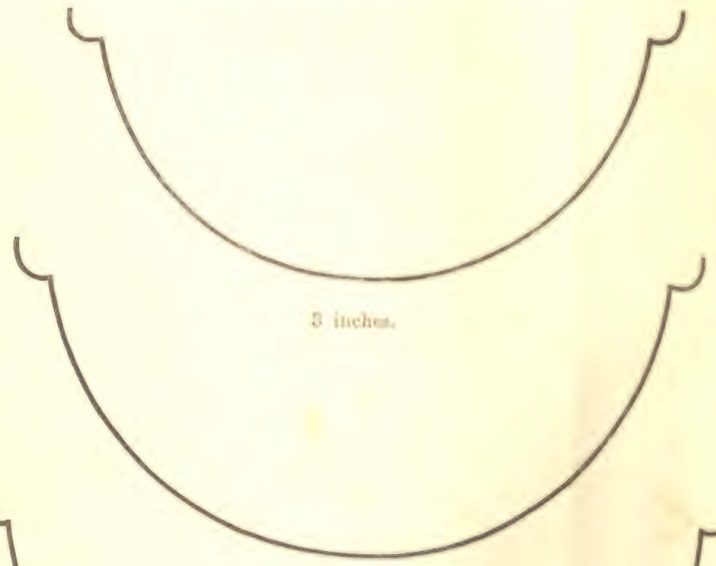
8 inches.

MACFARLANE'S PATENT.

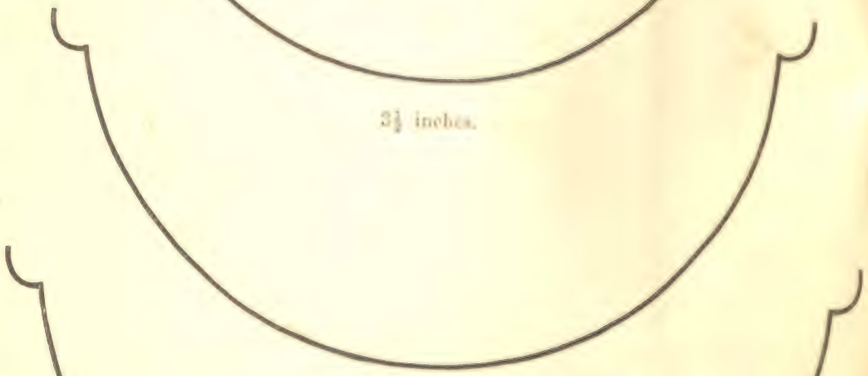
No. 2. HALF-ROUND GUTTERS, with Beaded Edges.



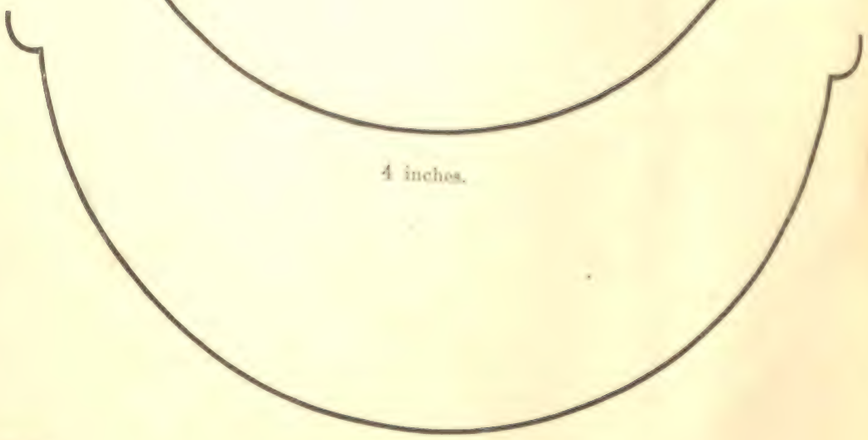
3, 3½, 4, 4½, 5, 6 and 8 inches diameter.



3 inches.



3½ inches.



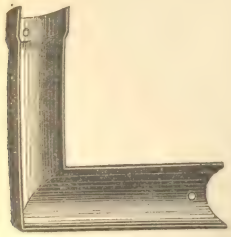
4 inches.

4½ inches.

Sections real Size,—outside measure.

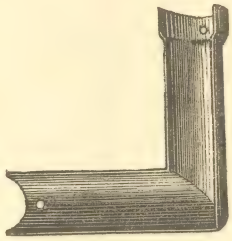
Nos. 1 AND 2 HALF-ROUND GUTTER CONNECTIONS.

EFT HAND ANGLE.

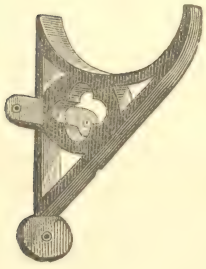


NOZZLE PIECE.

RIGHT HAND ANGLE.

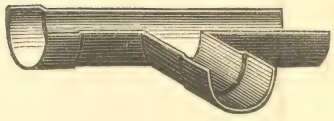


No. 1 BRACKET.



UNION CLIP.

T PIECE.



BOLT AND NUT.

FAUCET STOP END.

SPIGOT STOP END.

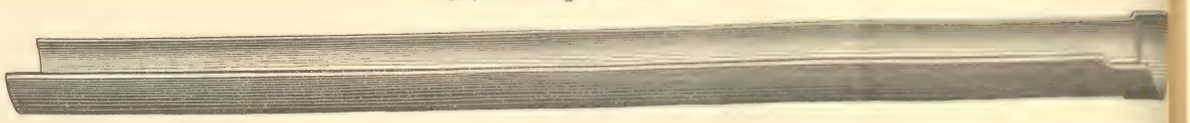
HOOK.

For 3, 3½, 4, 4½, 5, 6, 8, and 10 inch Gutters.

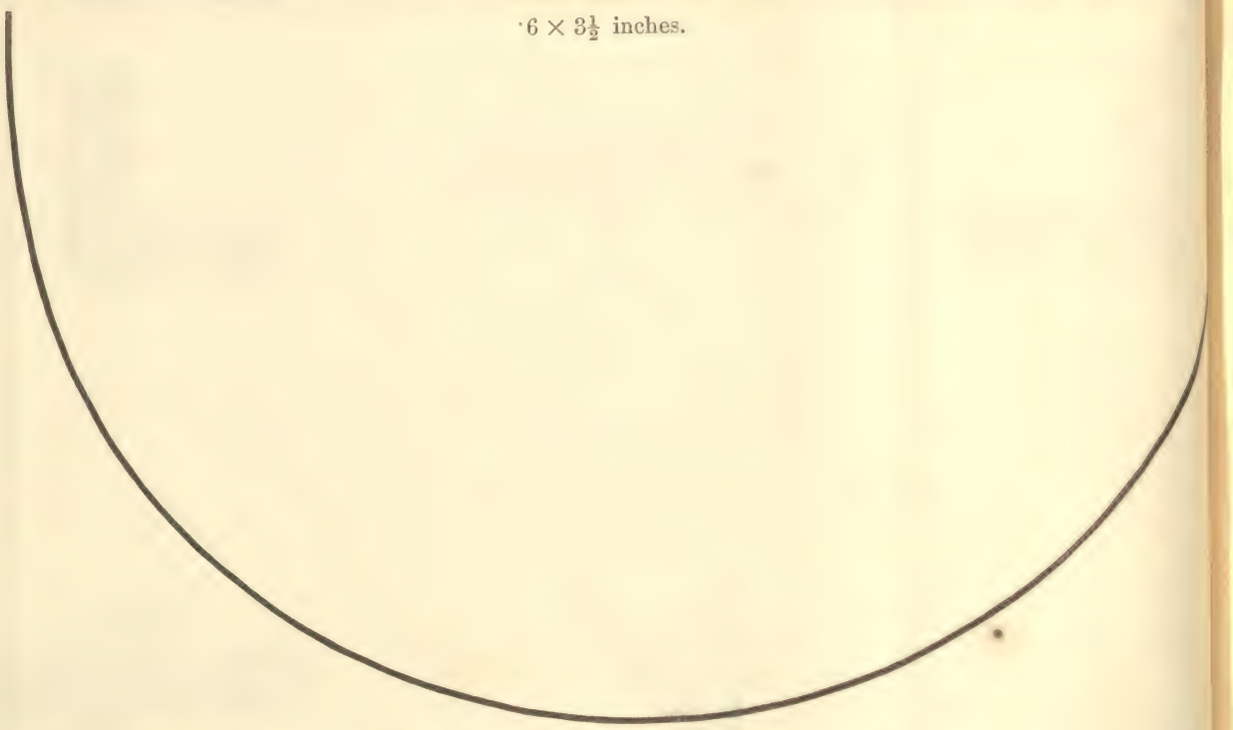
MACFARLANE'S PATENT.

HALF-ROUND GUTTERS.

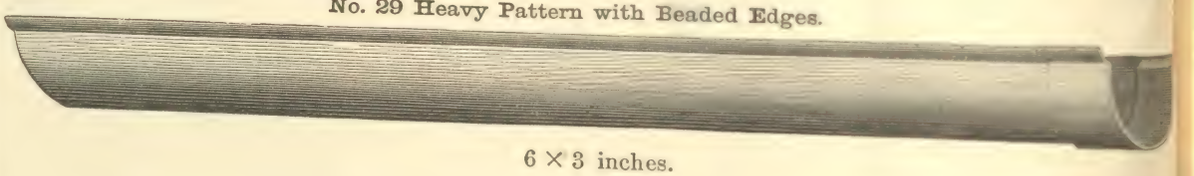
No. 7 Deep Pattern.



6 × 3½ inches.



No. 29 Heavy Pattern with Beaded Edges.



6 × 3 inches.

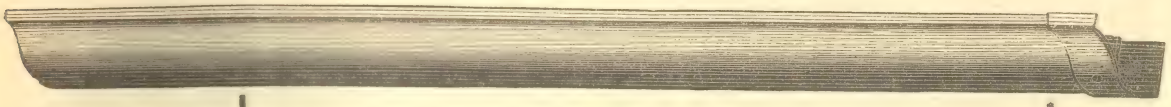
Sections real Size,—outside measure.

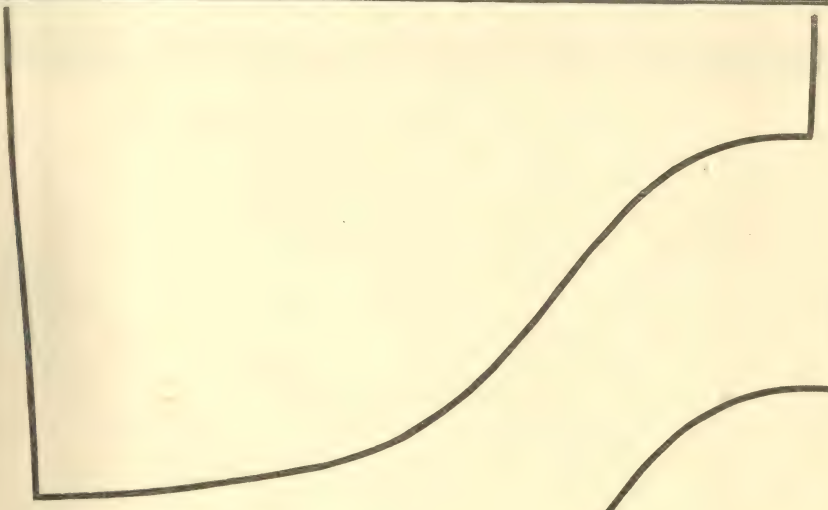
MACFARLANE'S PATENT.

OG GUTTERS.

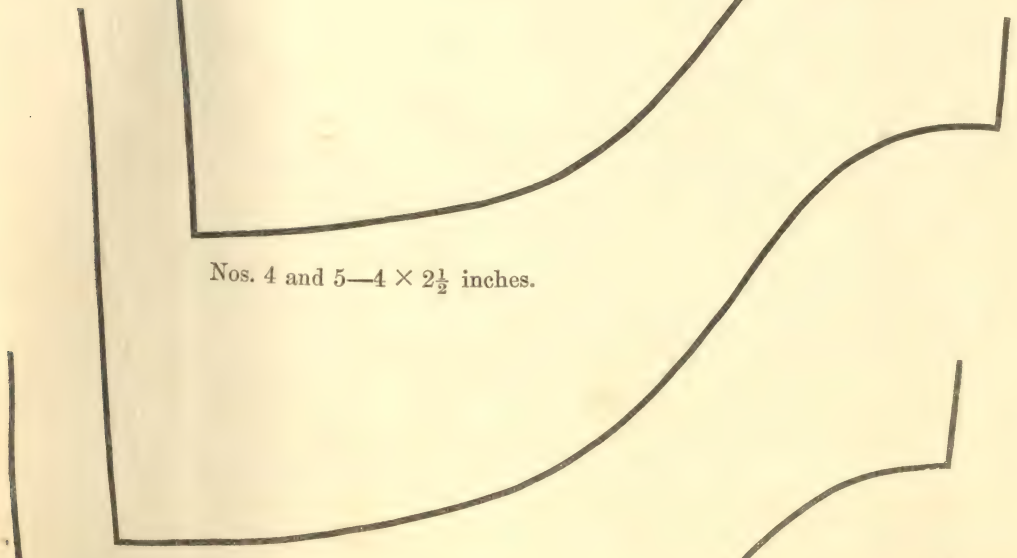
No. 4.

No. 5 with Faucet.

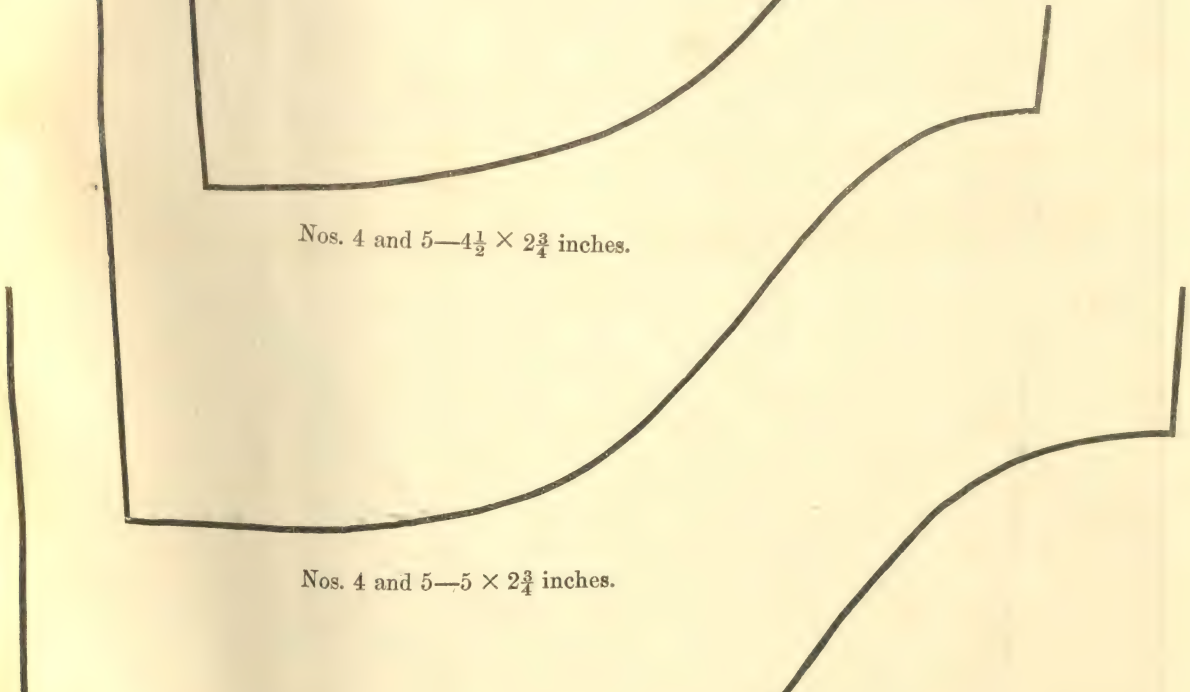




Nos. 4 and 5—4 × 2½ inches.



Nos. 4 and 5—4½ × 2¾ inches.



Nos. 4 and 5—5 × 2¾ inches.

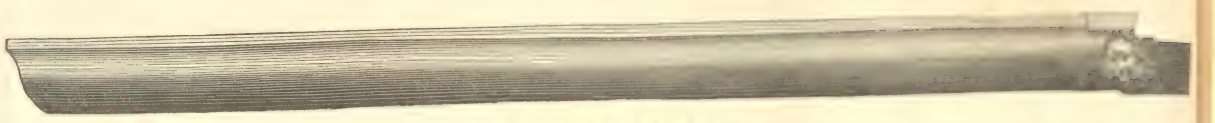
Nos. 4 and 5—6 × 3 inches.

Sections real Size,—outside measure.

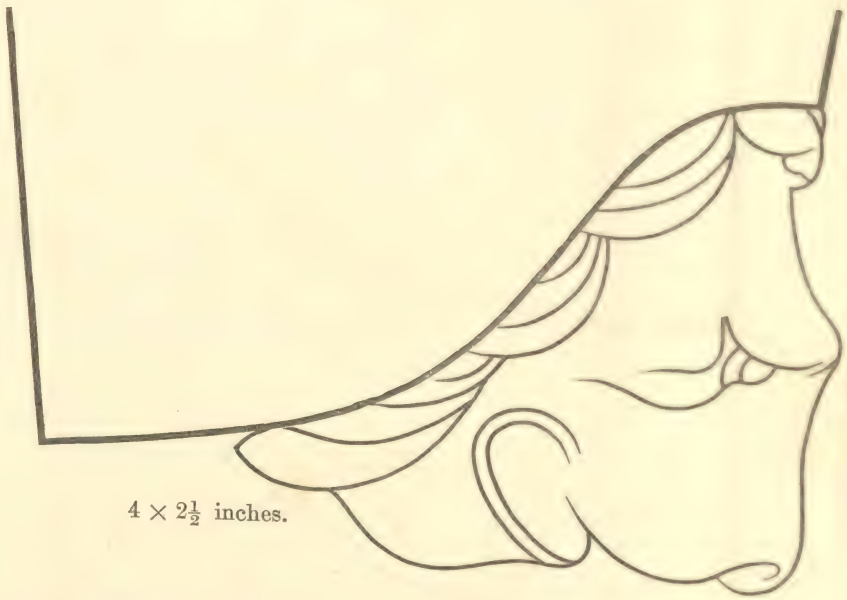
MACFARLANE'S PATENT.

OG GUTTERS.

No. 6 with Lion Head Faucet.



4, $4\frac{1}{2}$, 5, and 6 inches.



$4 \times 2\frac{1}{2}$ inches.

$4\frac{1}{2} \times 2\frac{3}{4}$ inches.

Sections real Size,—outside measure.

No. 6 OG GUTTER SECTIONS.

5 × 2¾ inches.

6 × 3 inches.

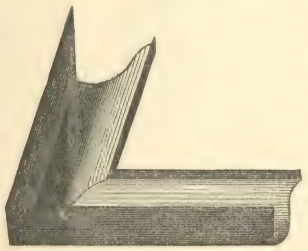
Sections real Size,—outside measure.

MACFARLANE'S PATENT.

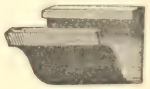
OG GUTTER CONNECTIONS.

No. 4.

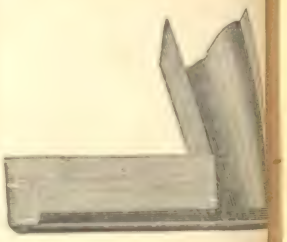
INTERNAL ANGLE.



UNION CLIP.

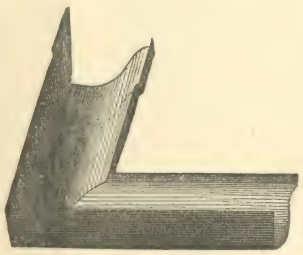


EXTERNAL ANG

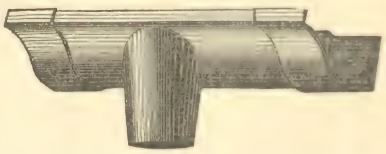


No. 5.

INTERNAL ANGLE.



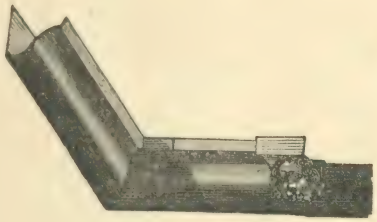
NOZZLE PIECE.



EXTERNAL AN

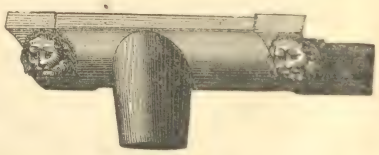
No. 6.

INTERNAL ANGLE.

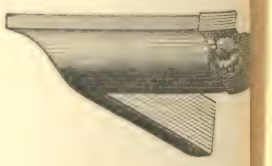


UNION CLIP.

NOZZLE PIECE.

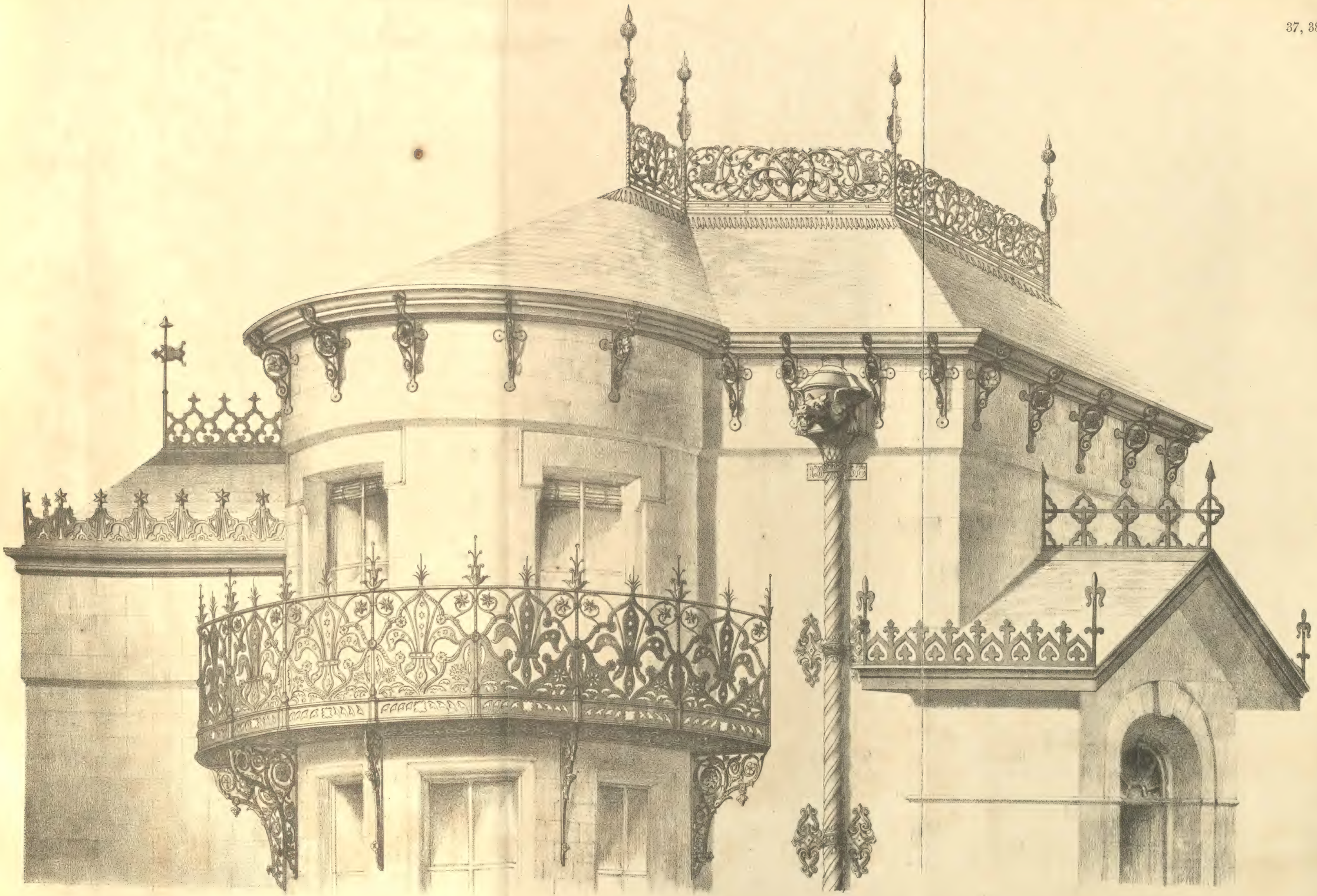


EXTERNAL ANGLE.



For 4, 4½, 5, and 6 inch Gutters.

Scale, 1½ inch—1 foot.

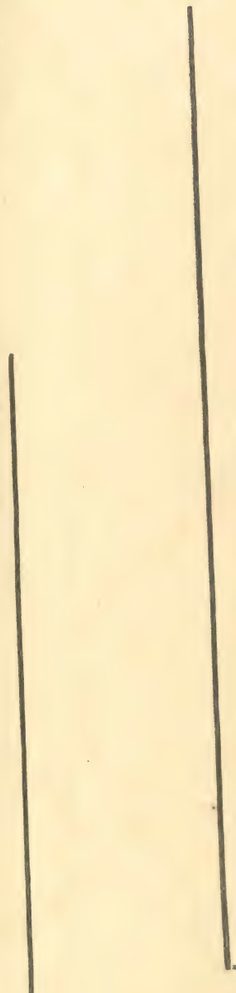


MACFARLANE'S EXAMPLES, *showing various modes of applying Cast Iron Rain Water Gutters, &c., to Buildings.*

MACFARLANE'S PATENT.

No. 8 ORNAMENTAL GUTTER SECTIONS.

6 × 4½ inches.



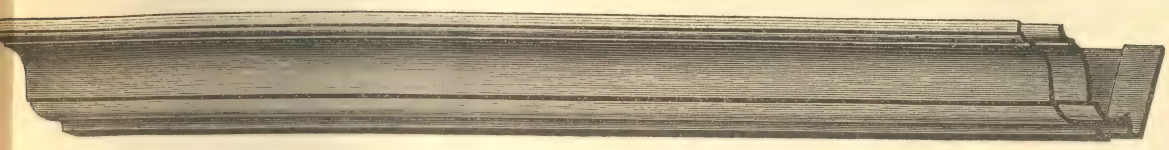
8 × 6 inches.

10 × 6 inches.

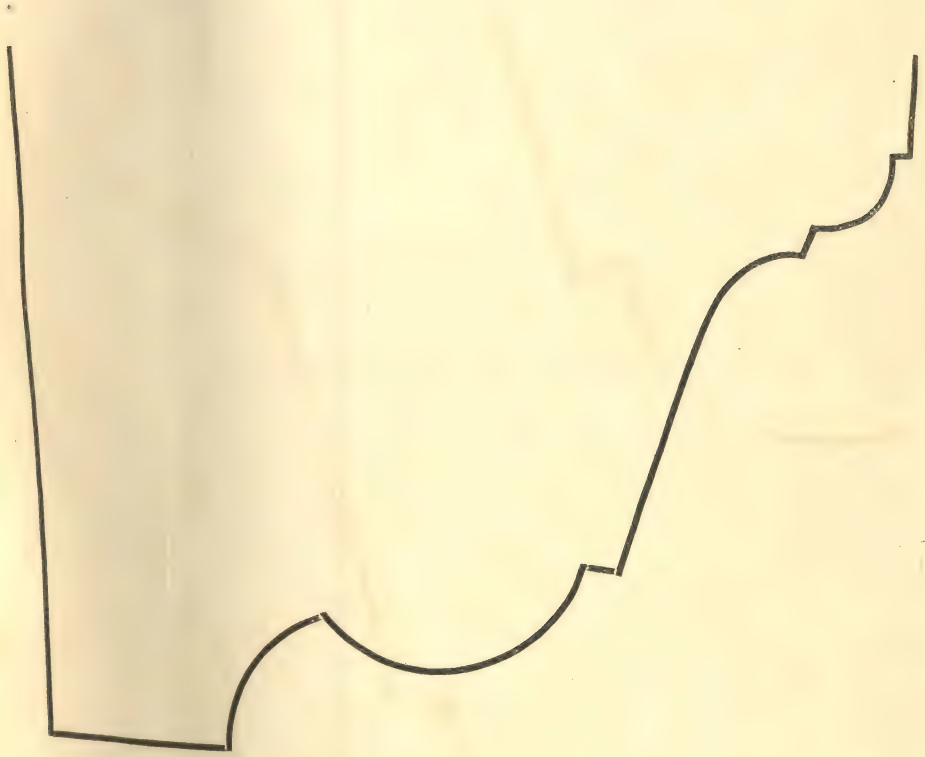
Sections real Size,—outside measure.

MACFARLANE'S PATENT.

No. 8 ORNAMENTAL GUTTER.



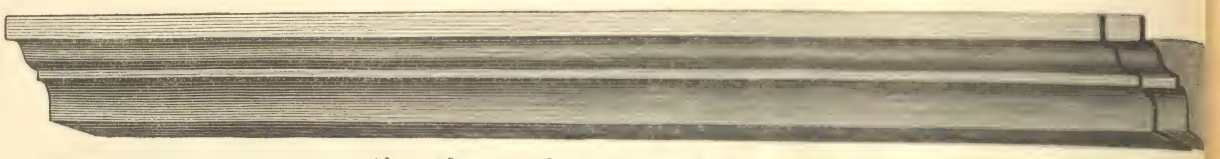
$4\frac{1}{2} \times 3\frac{1}{2}$, $6 \times 4\frac{1}{2}$, 8×6, and 10×6 inches.



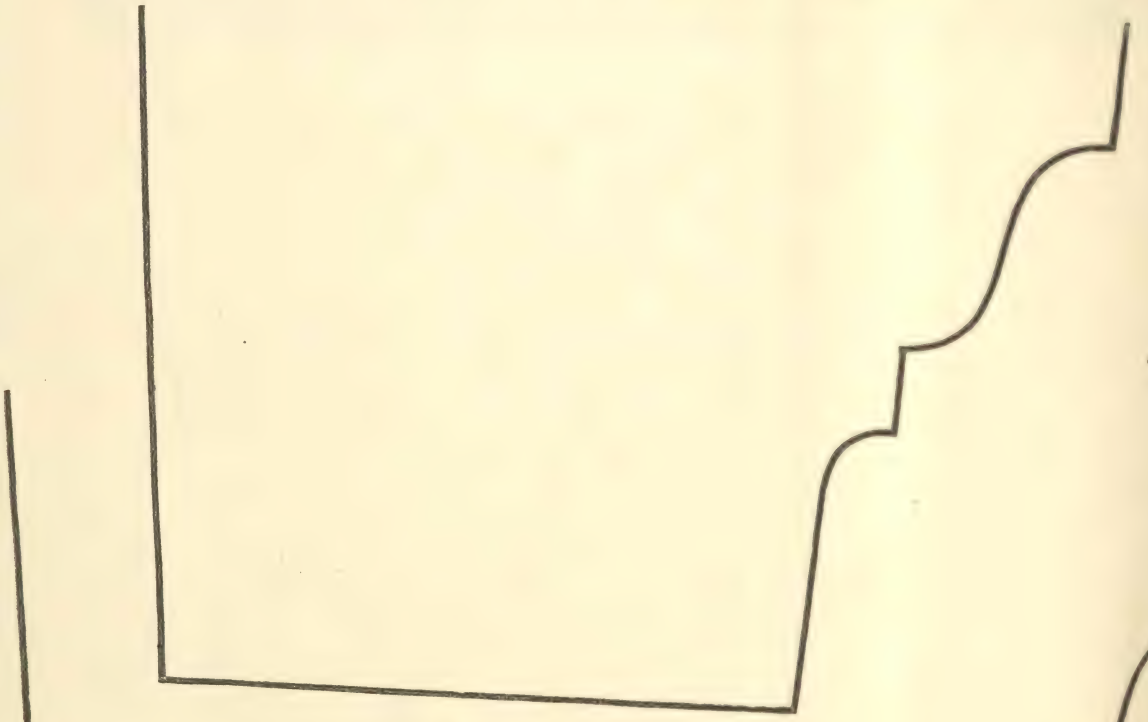
$4\frac{1}{2} \times 3\frac{1}{2}$ inches.

Section real Size,—outside measure.

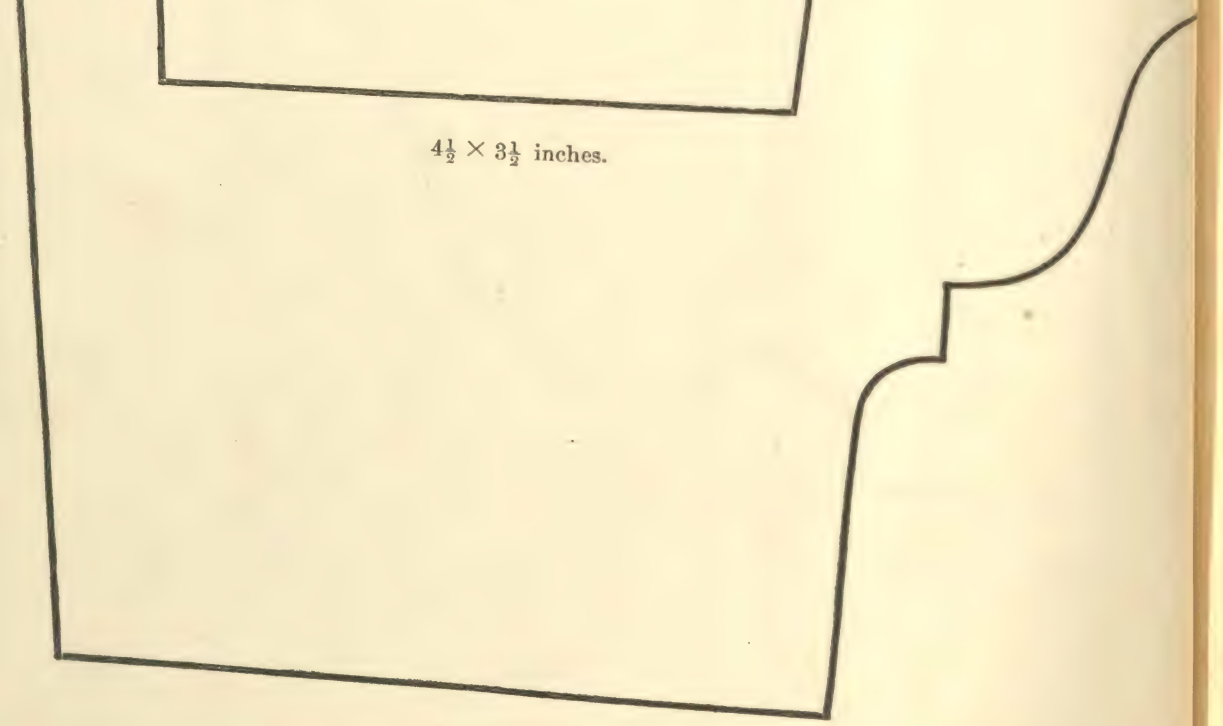
No. 10 ORNAMENTAL GUTTER.



$4\frac{1}{2} \times 3\frac{1}{2}$, $6 \times 4\frac{1}{2}$, 8×6, and 10×6 inches.



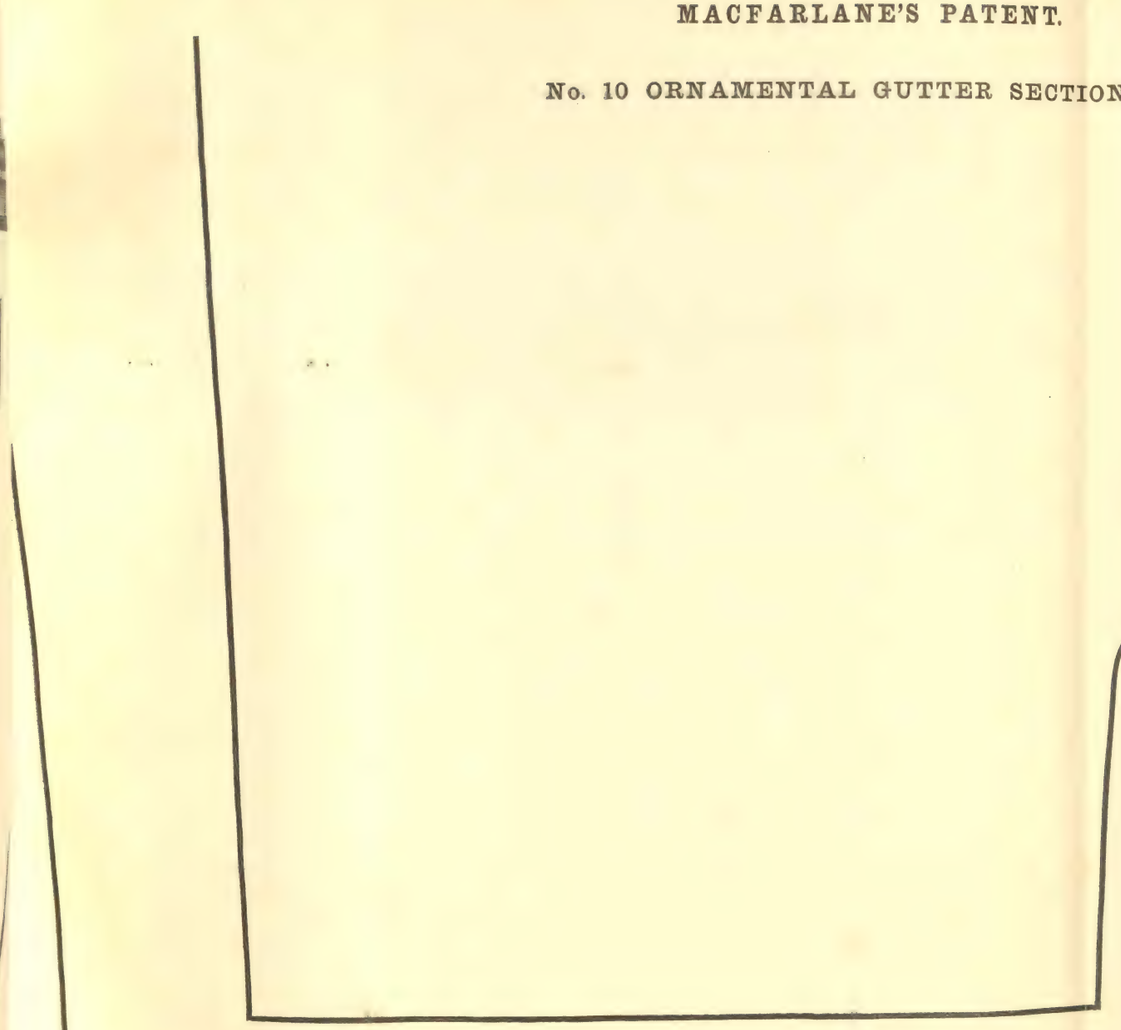
$4\frac{1}{2} \times 3\frac{1}{2}$ inches.



$6 \times 4\frac{1}{2}$ inches.

Sections real Size,—outside measure.

No. 10 ORNAMENTAL GUTTER SECTIONS.



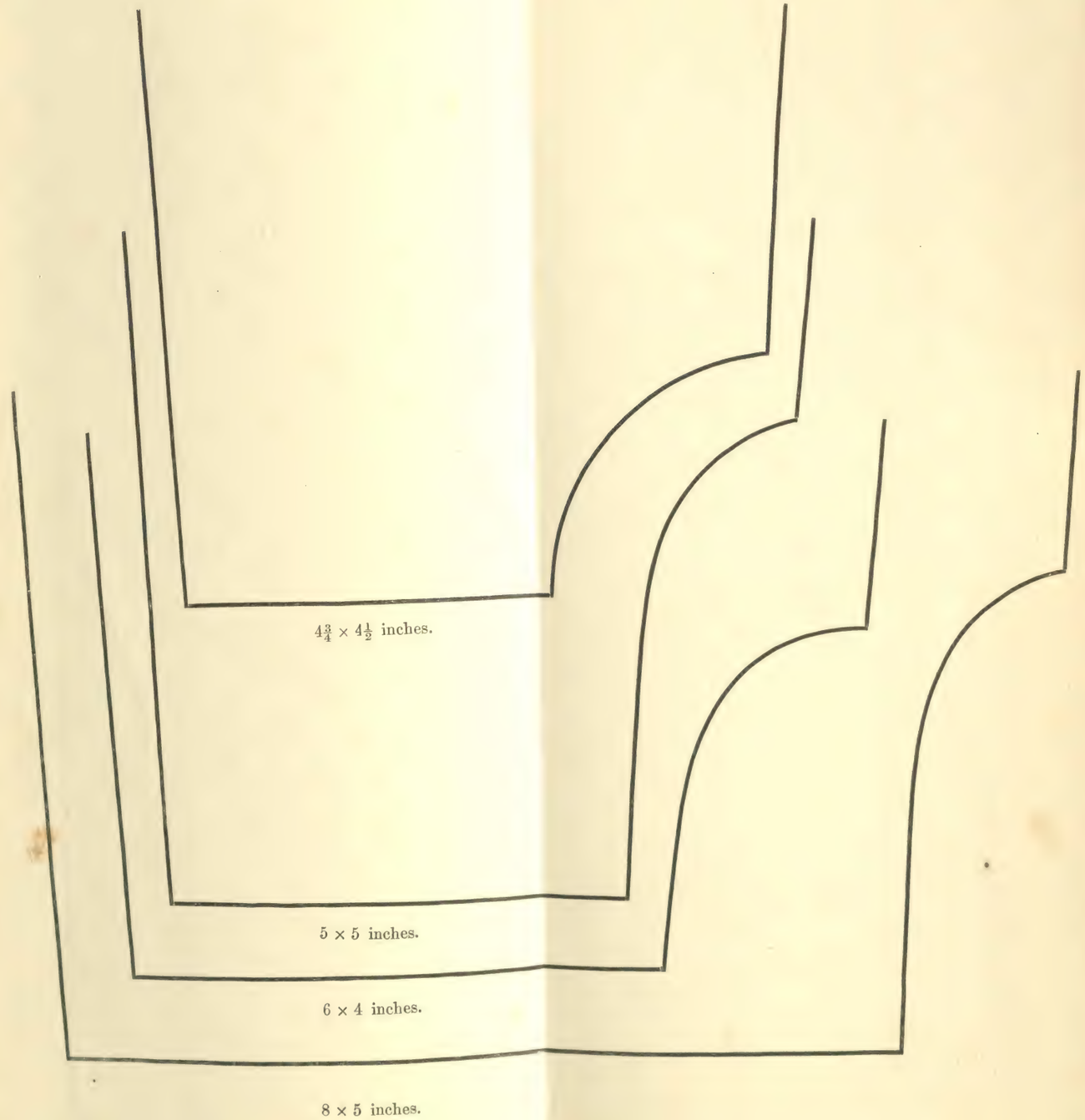
8 × 6 inches.

10 × 6 inches.

Sections real Size—outside measure.

MACFARLANE'S PATENT.

ORNAMENTAL GUTTERS.



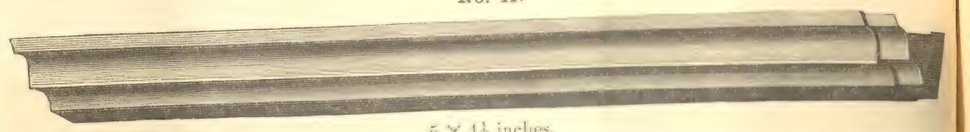
$4\frac{3}{4} \times 4\frac{1}{2}$ inches.

5×5 inches.

6×4 inches.

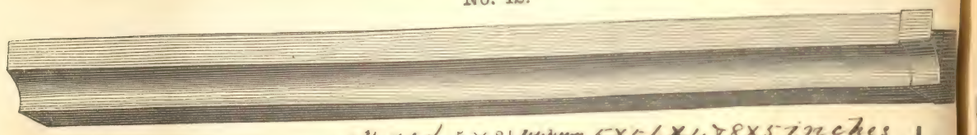
8×5 inches.

No. 11.

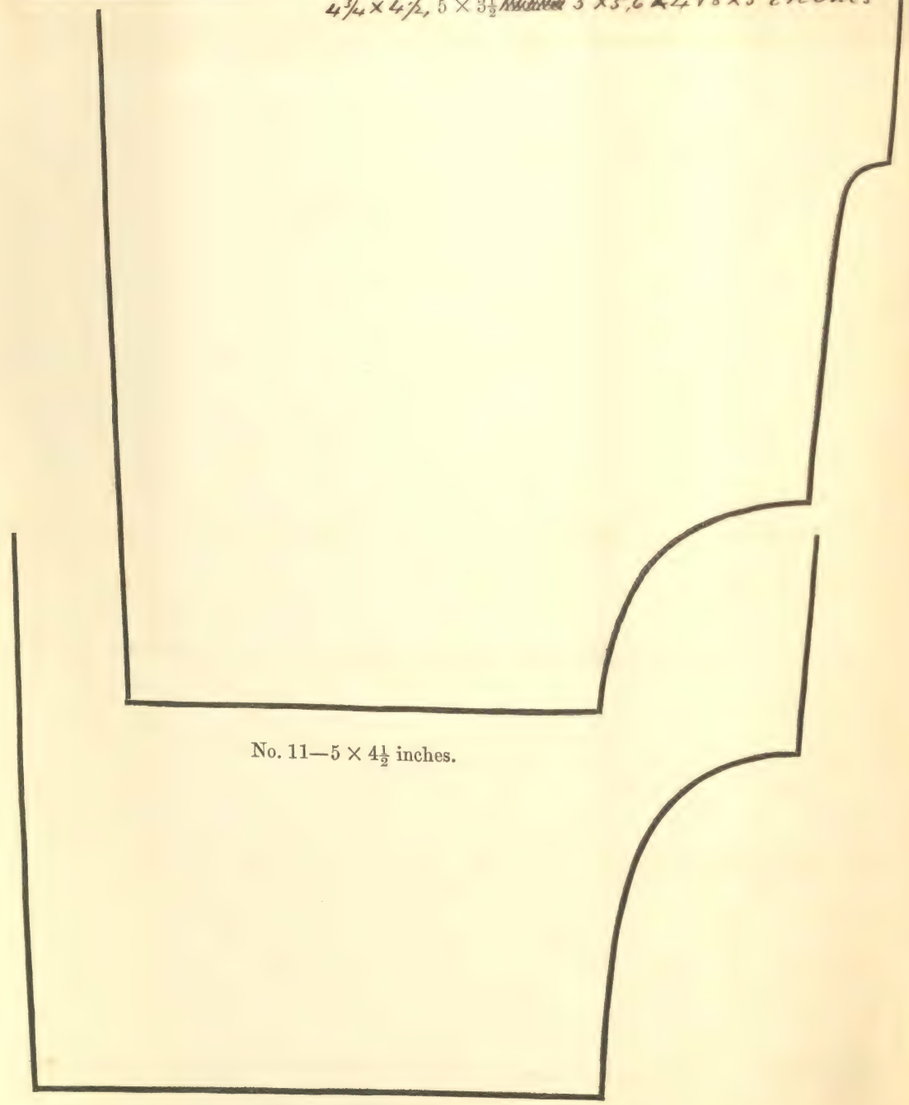


$5 \times 4\frac{1}{2}$ inches.

No. 12.



$4\frac{3}{4} \times 4\frac{1}{2}$, $5 \times 3\frac{1}{2}$ ~~inches~~ 5×5, 6×4, 8×5 inches



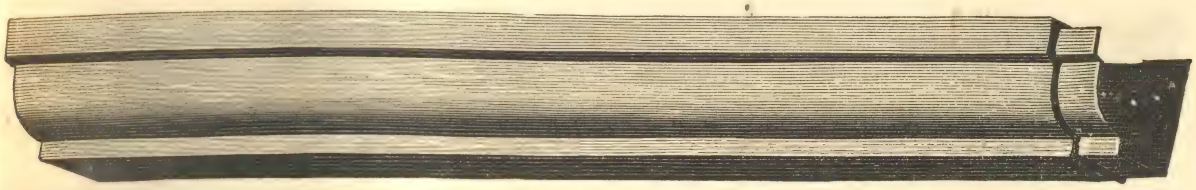
No. 11—$5 \times 4\frac{1}{2}$ inches.

No. 12—$5 \times 3\frac{1}{2}$ inches.

Sections real Size—outside measure.

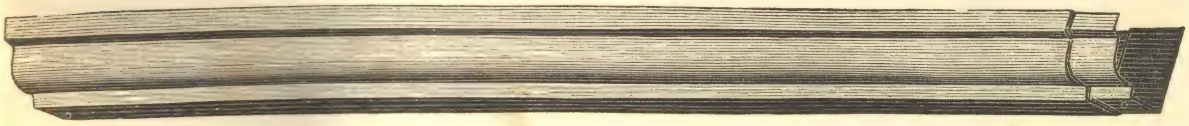
ORNAMENTAL GUTTERS.

No. 13.

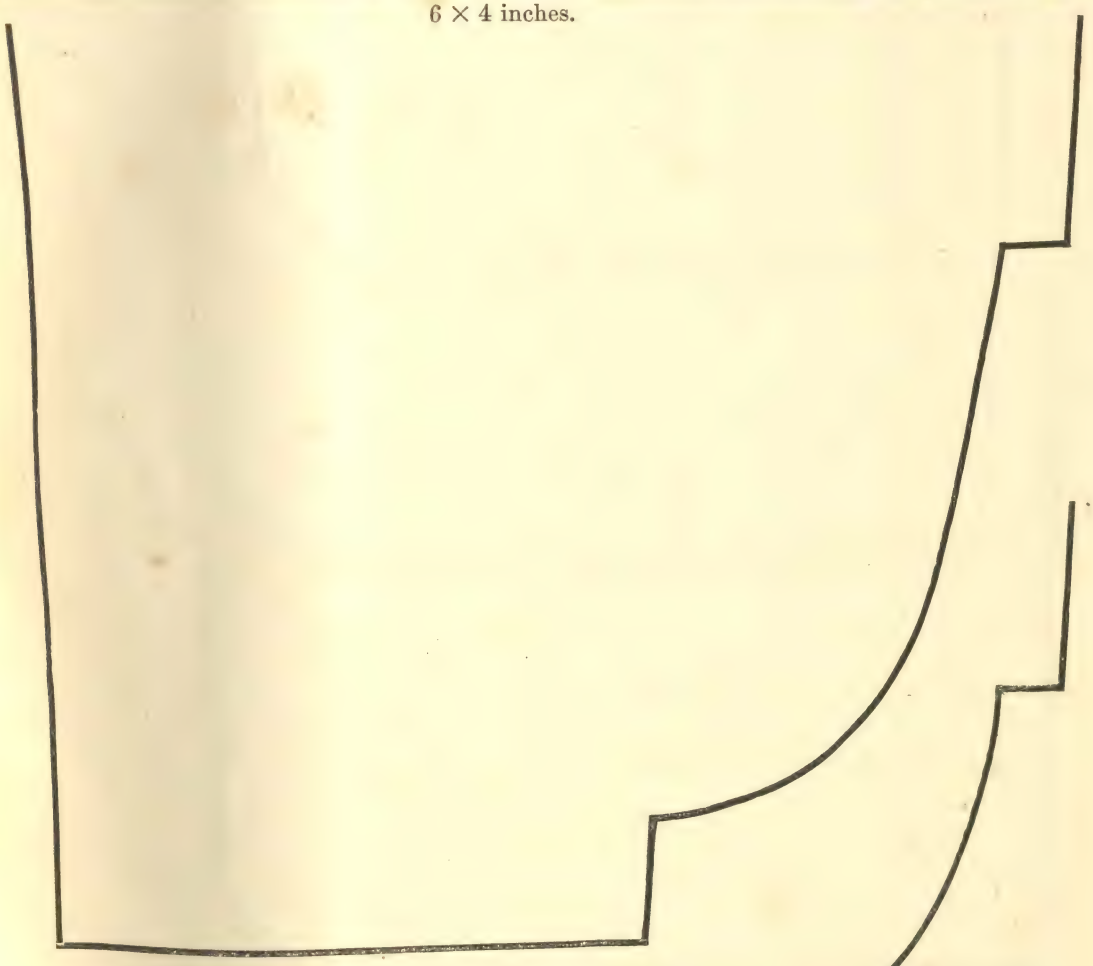


$5\frac{1}{2} \times 5$ inches.

No. 15.



6×4 inches.

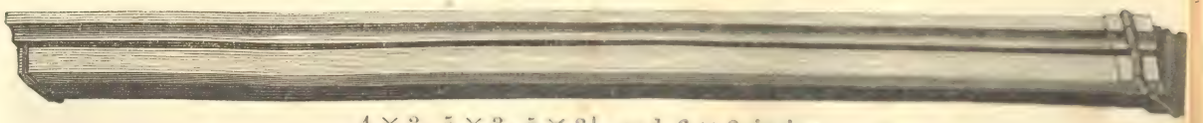


No. 13—$5\frac{1}{2} \times 5$ inches.

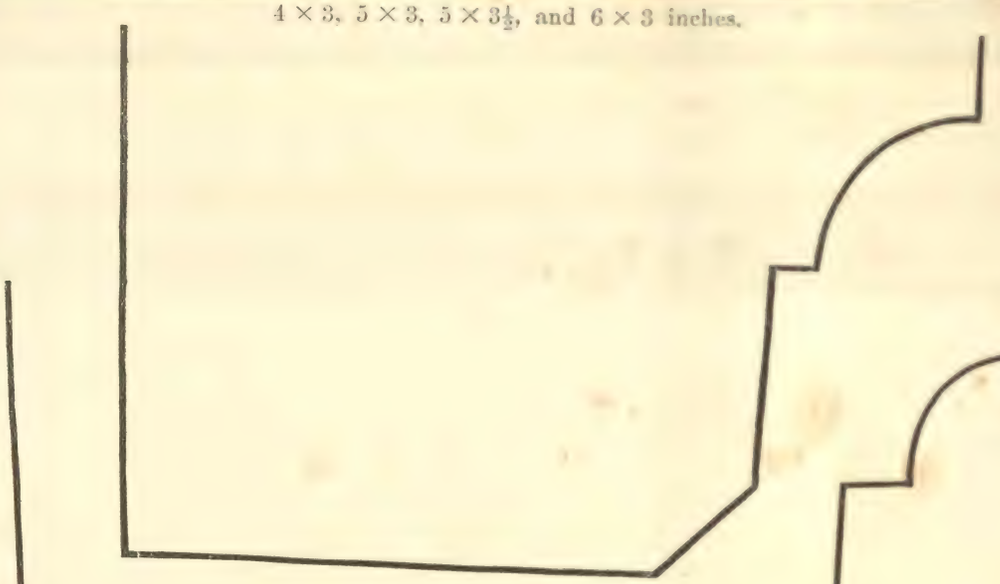
No. 15—6×4 inches.

Sections real Size—outside measure.

No. 14 ORNAMENTAL GUTTERS.

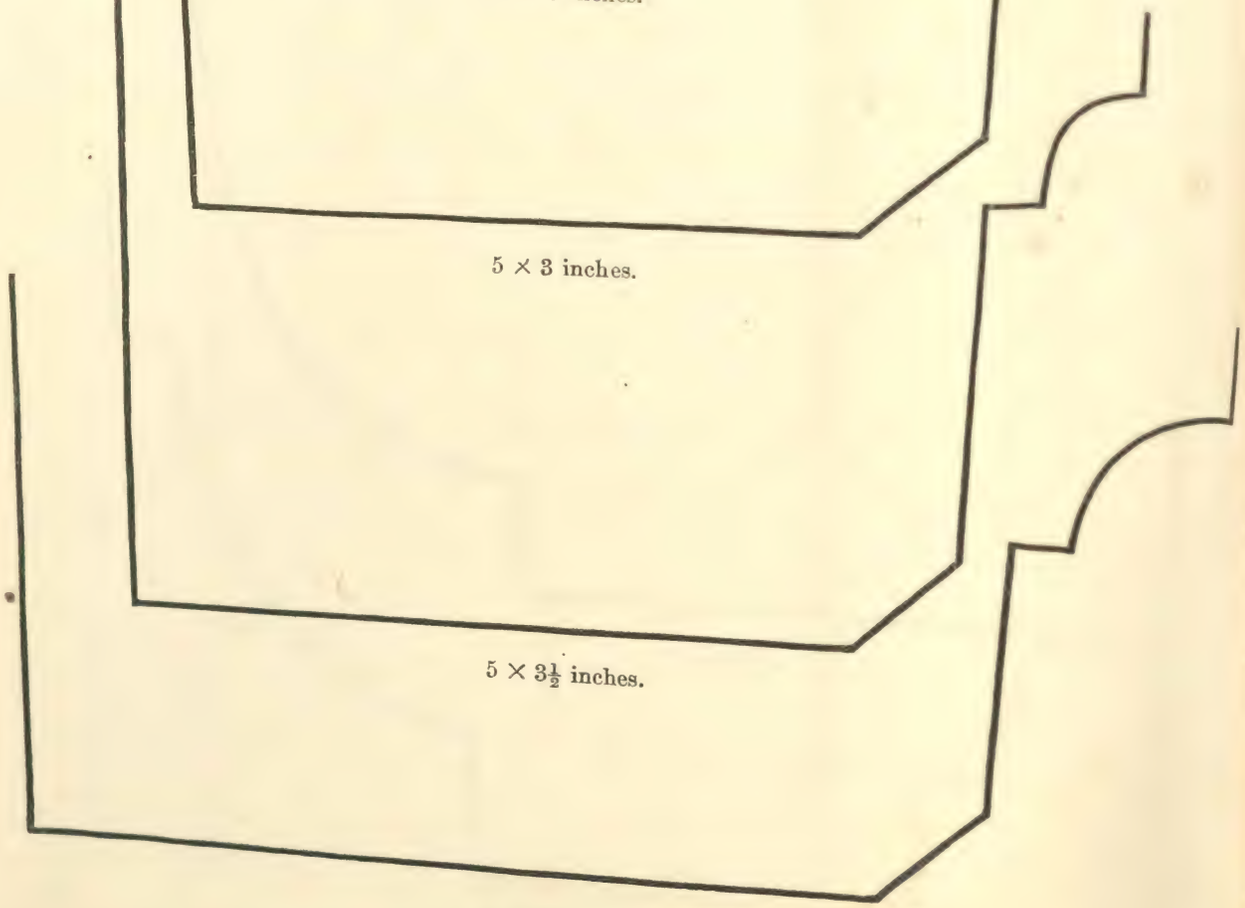


4 × 3, 5 × 3, 5 × 3½, and 6 × 3 inches.



4 × 3 inches.

5 × 3 inches.

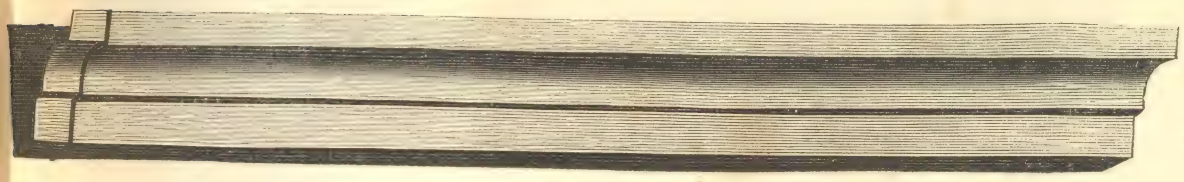


5 × 3½ inches.

6 × 3 inches.

Sections real Size—outside measure.

No. 16 ORNAMENTAL GUTTER.



4½ × 3½ 6 × 6 inches.

6 × 6 inches.

Section real Size—outside measure.

No. 23 ORNAMENTAL GUTTERS.

4 × 3, 4 × 4, 5 × 4, 5 × 5, 6 × 5, 7 × 5, 8 × 5½, and 10 × 6 inches.

4 × 3 inches.

4 × 4 inches.

5 × 4 inches.

Sections real Size—outside measure.

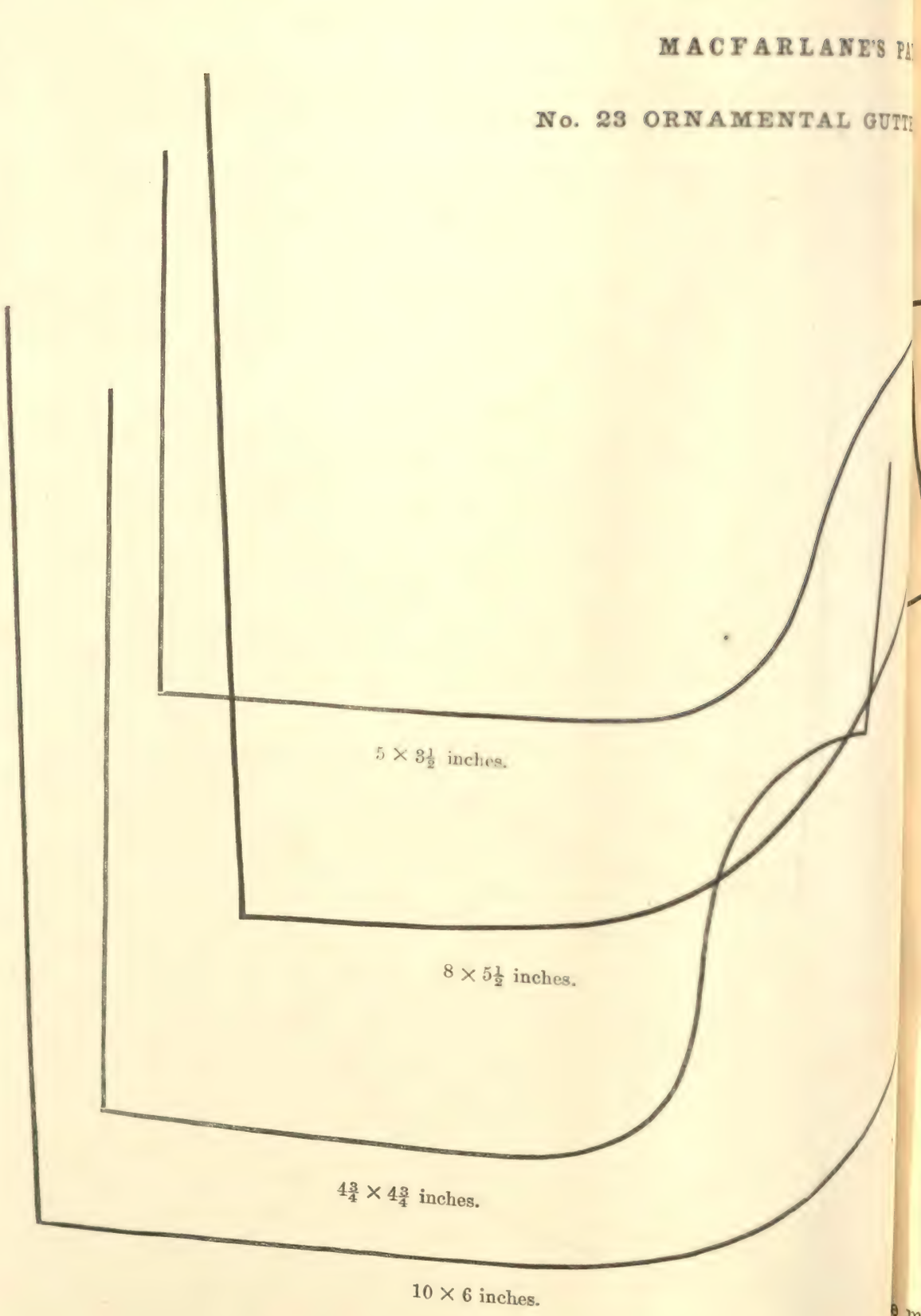
No. 23 ORNAMENTAL GUTTER SECTIONS.

5 × 5 inches.

6 × 5 inches.

Sections real Size—outside measure.

No. 23 ORNAMENTAL GUTT

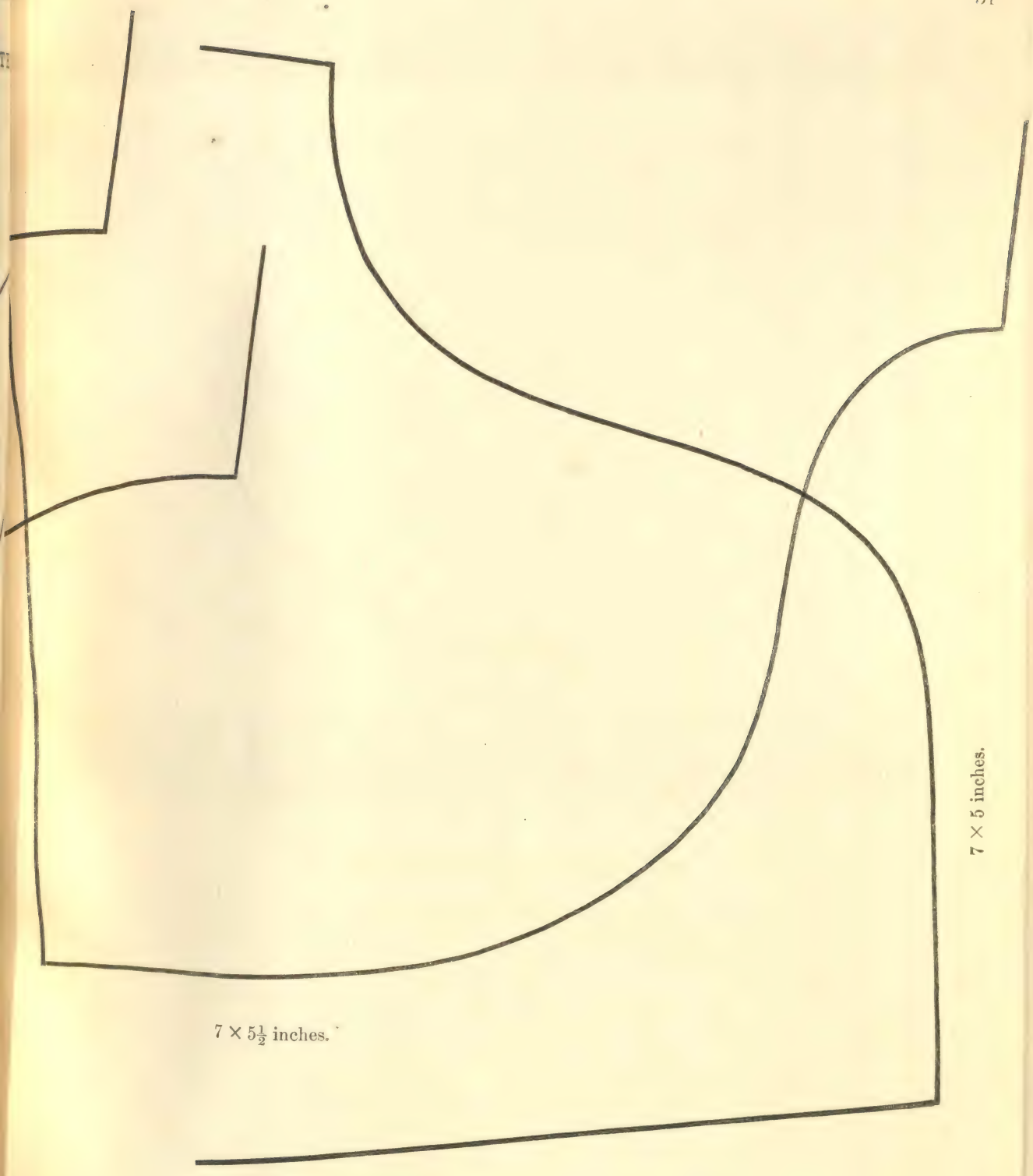


$5 \times 3\frac{1}{2}$ inches.

$8 \times 5\frac{1}{2}$ inches.

$4\frac{3}{4} \times 4\frac{3}{4}$ inches.

10×6 inches.



7 × 5 inches.

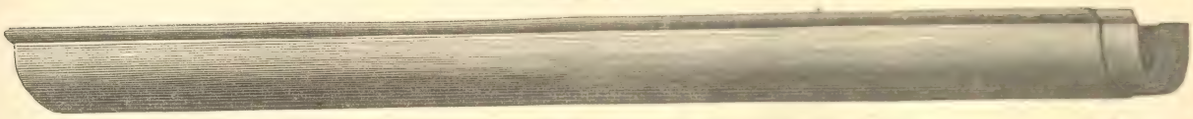
7 × 5½ inches.

measure.

MACFARLANE'S PATENT.

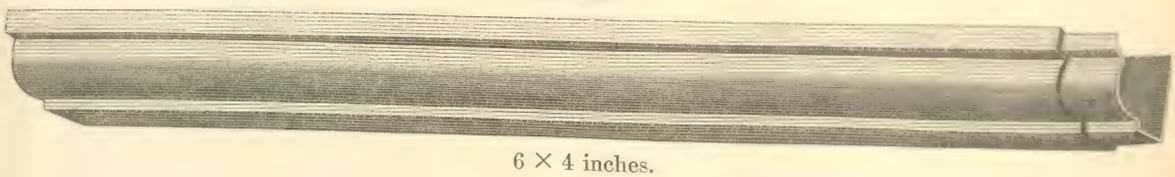
ORNAMENTAL GUTTERS.

No. 24.

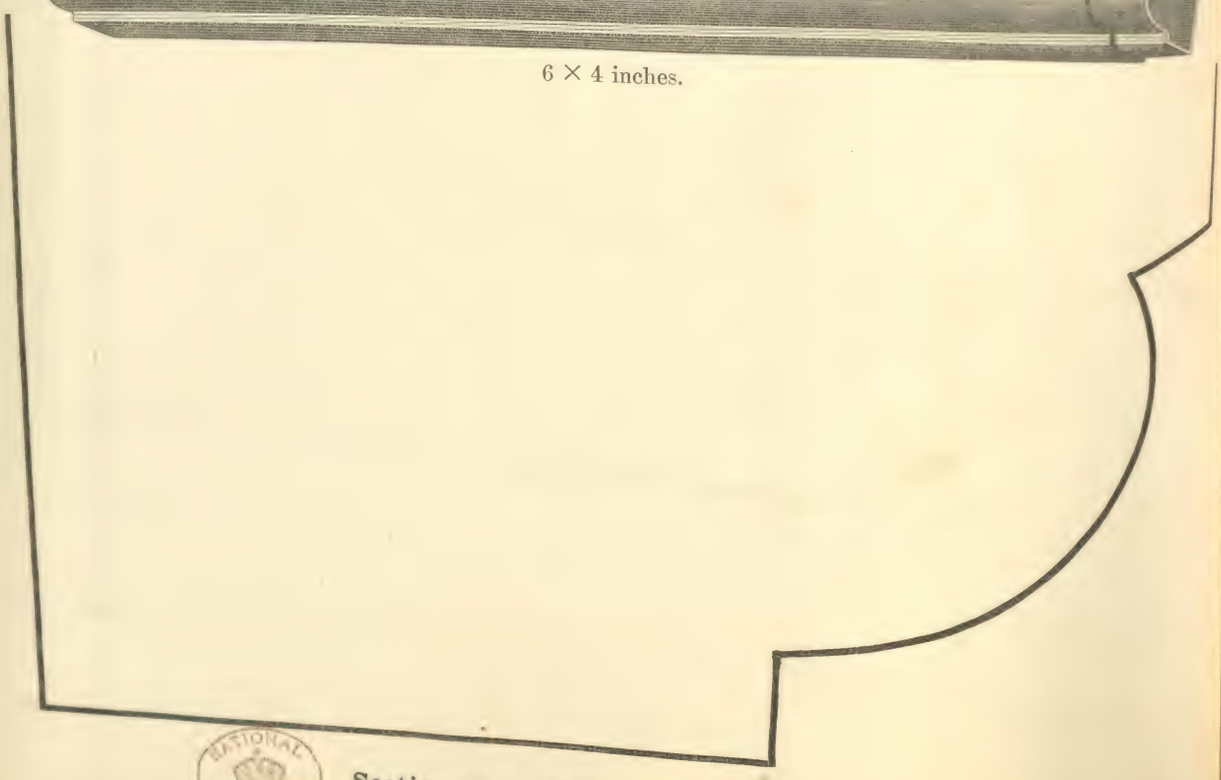


$5 \times 3\frac{1}{2}$ inches.

No. 26.

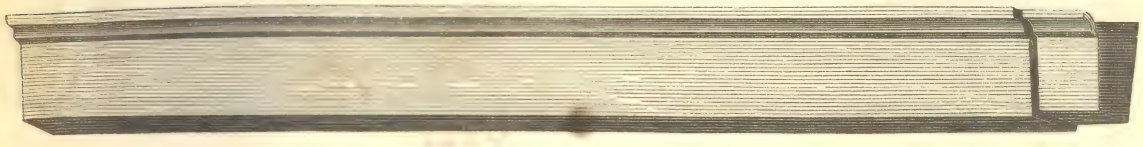


6×4 inches.

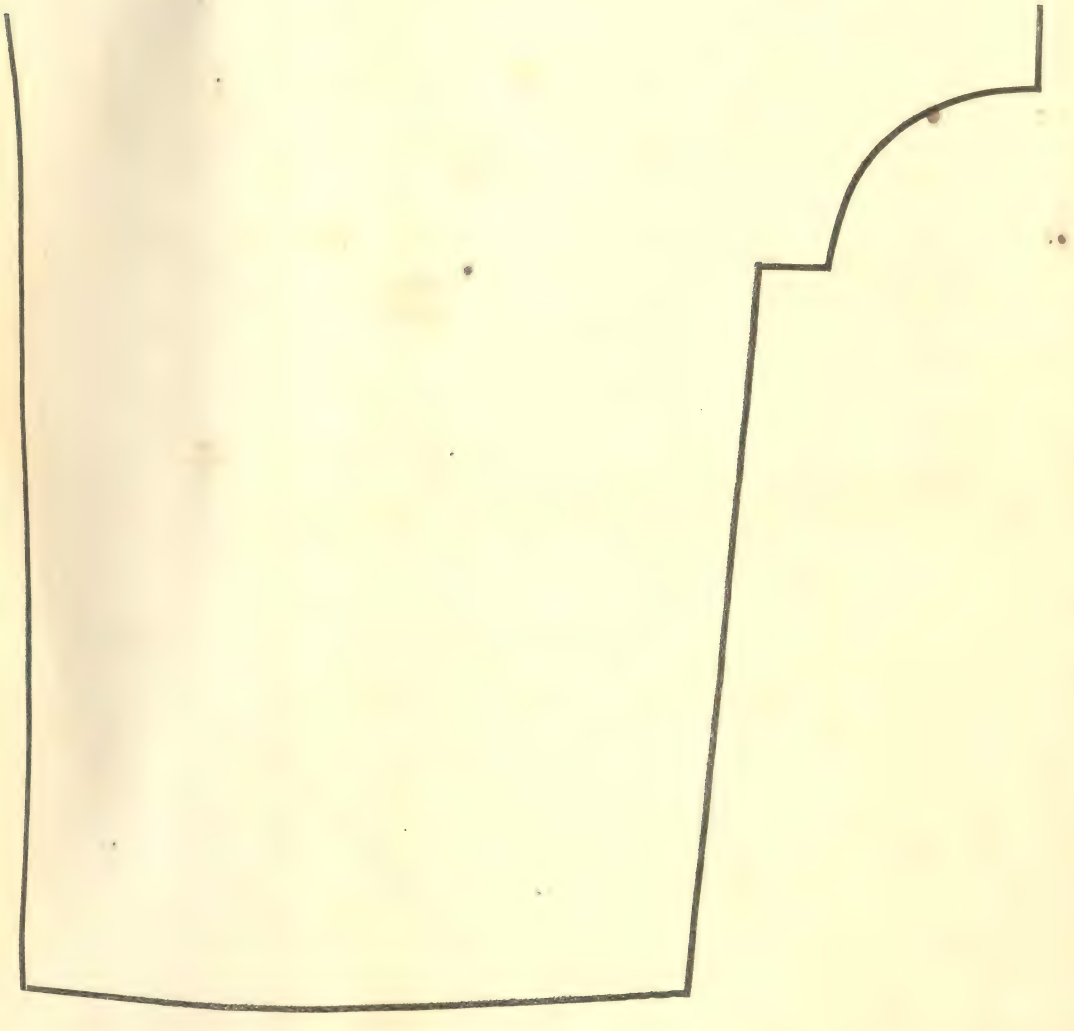


Sections real Size—outside measure.

No. 30 ORNAMENTAL GUTTER.



5 × 5 inches.



Section real Size,—outside measure.

No. 33 ORNAMENTAL GUTTERS.

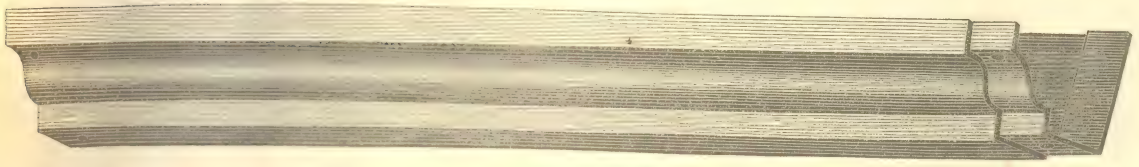
$4\frac{1}{2} \times 3$ 6 × 4 inches.

$4\frac{1}{2} \times 3$ inches.

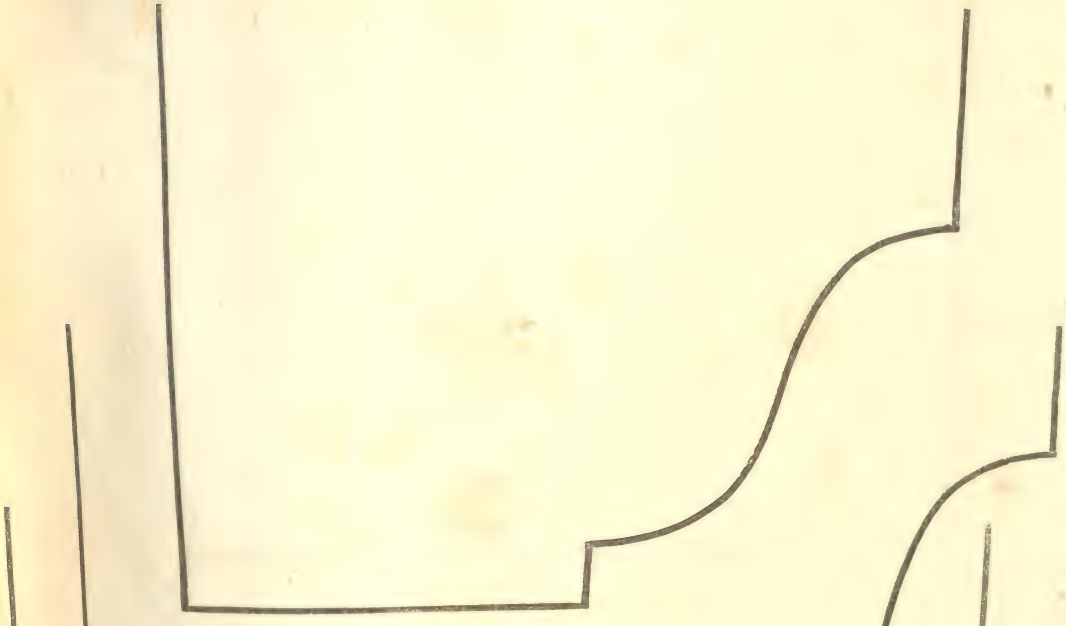
6 × 4 inches.

Sections real Size,—outside measure.

No. 34 ORNAMENTAL GUTTERS.

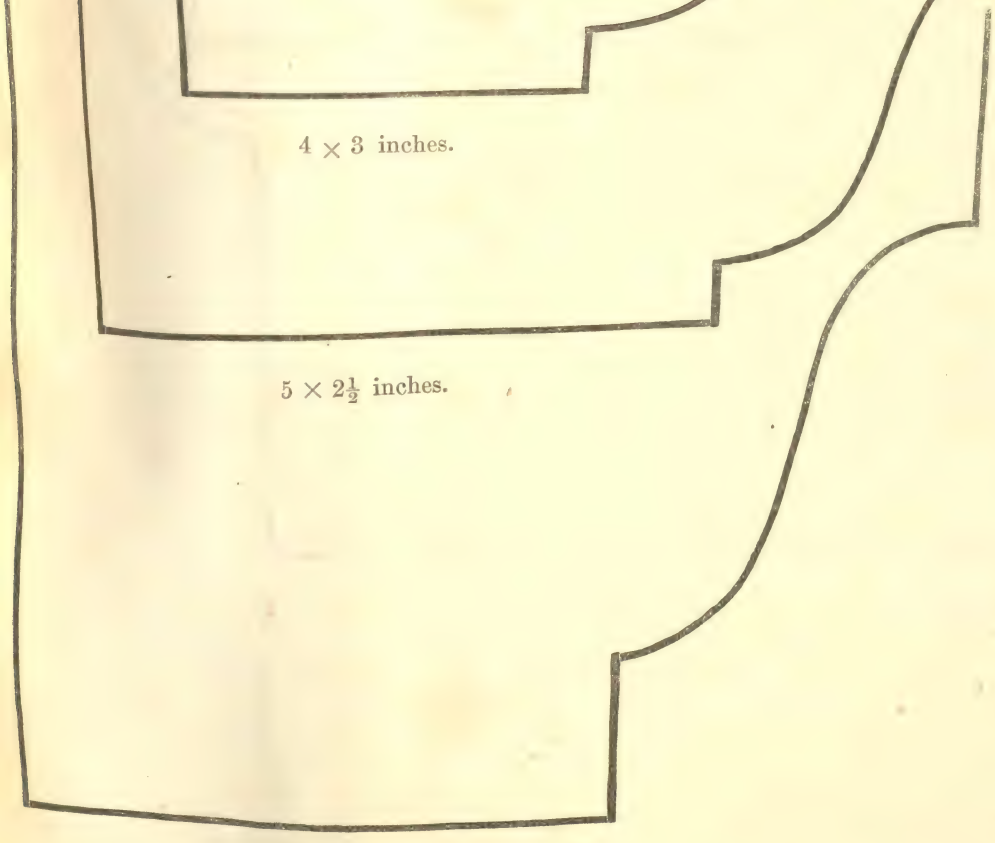


4 × 3, 5 × 2½, 5 × 4, 5½ × 4½, 6 × 4½, and 7 × 5½ inches.



4 × 3 inches.

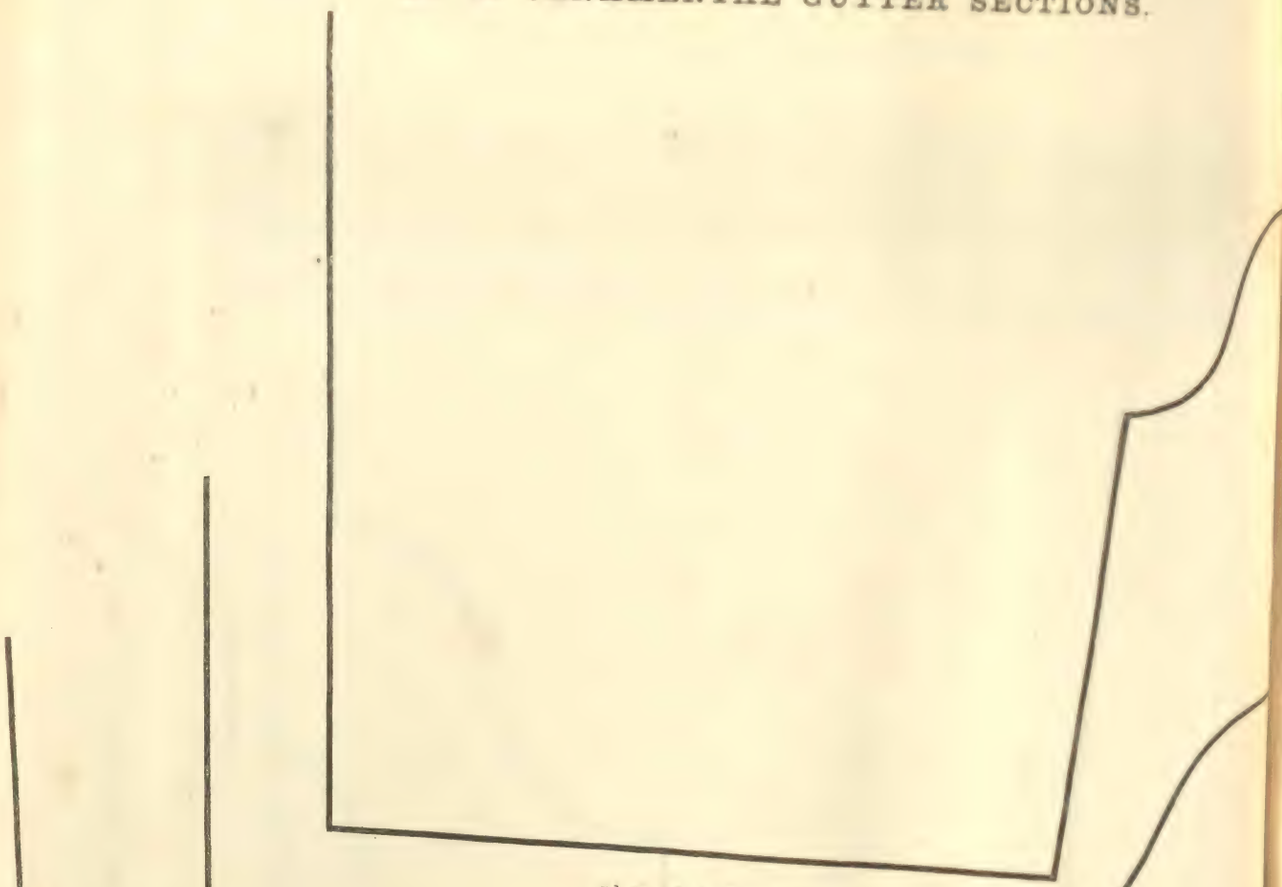
5 × 2½ inches.



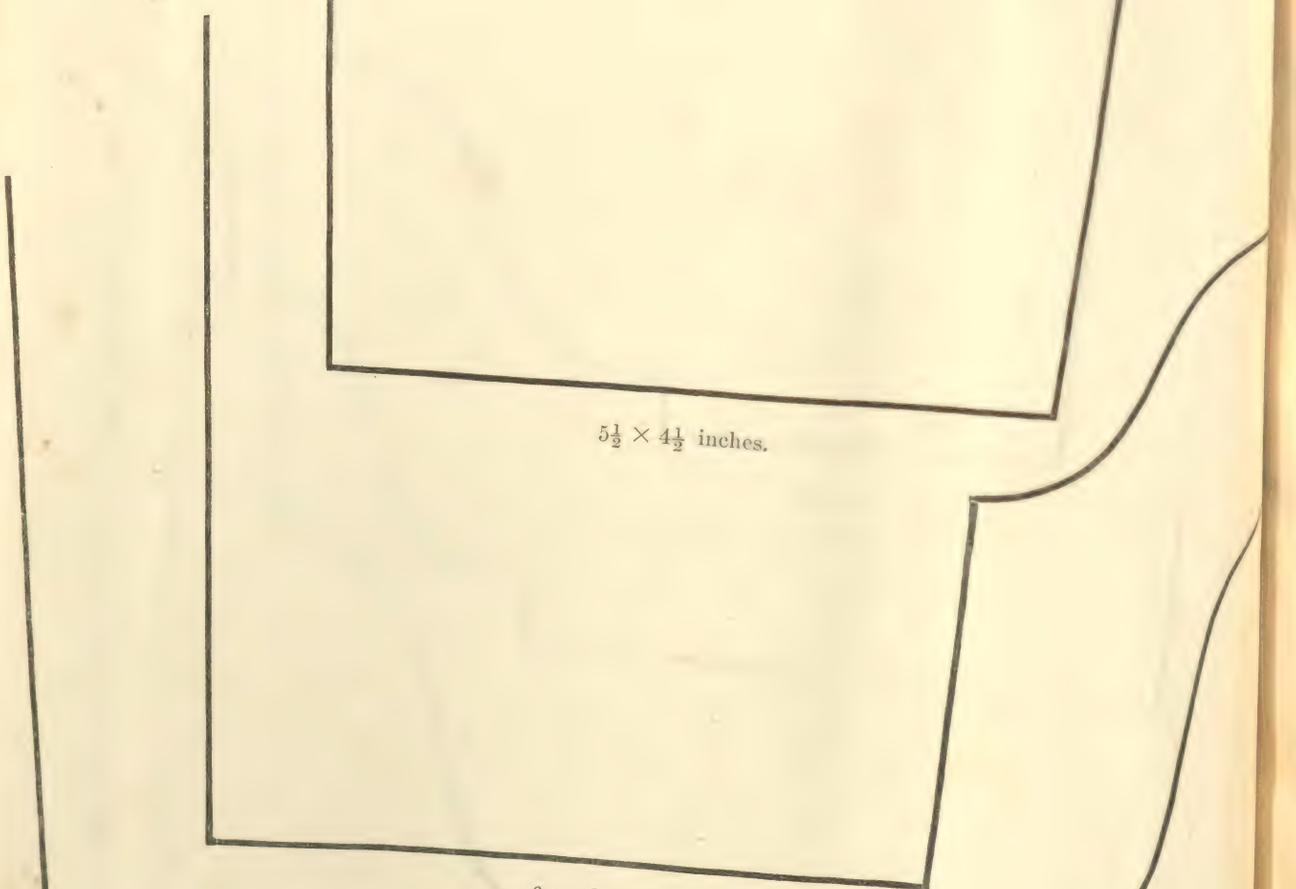
5 × 4 inches.

Sections real Size,—outside measure.

No. 34 ORNAMENTAL GUTTER SECTIONS.



$5\frac{1}{2} \times 4\frac{1}{2}$ inches.



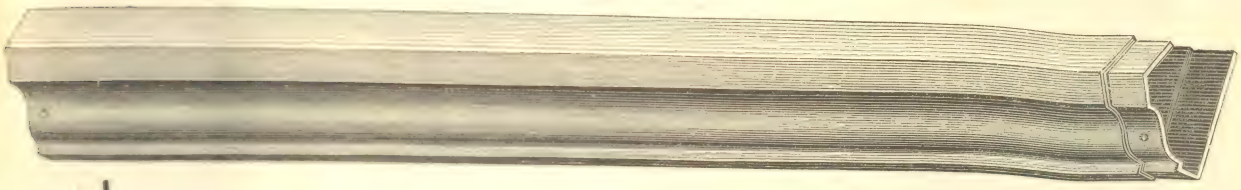
$6 \times 4\frac{1}{2}$ inches.

$7 \times 5\frac{1}{2}$ inches.

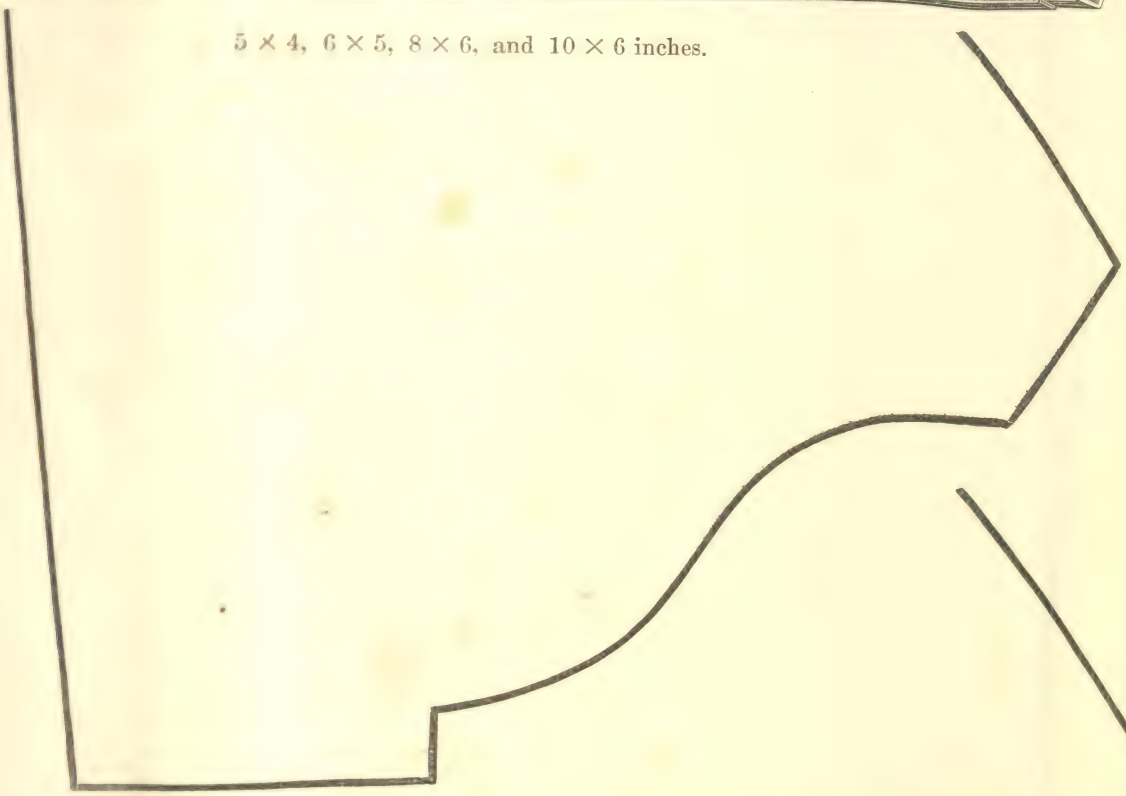
Sections real Size,—outside measure.

MACFARLANE'S PATENT.

No. 37 ORNAMENTAL GUTTERS.



5 × 4, 6 × 5, 8 × 6, and 10 × 6 inches.



5 × 4 inches.

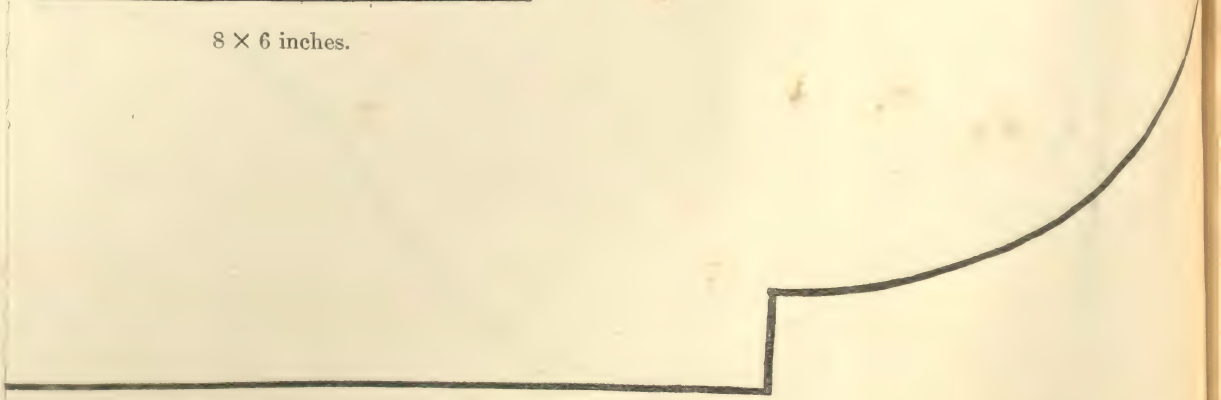
6 × 5 inches.

Sections real Size,—outside measure.

MACFARLANE'S PATENT.

No. 37 ORNAMENTAL GUTTER SECTIONS.

8 × 6 inches.



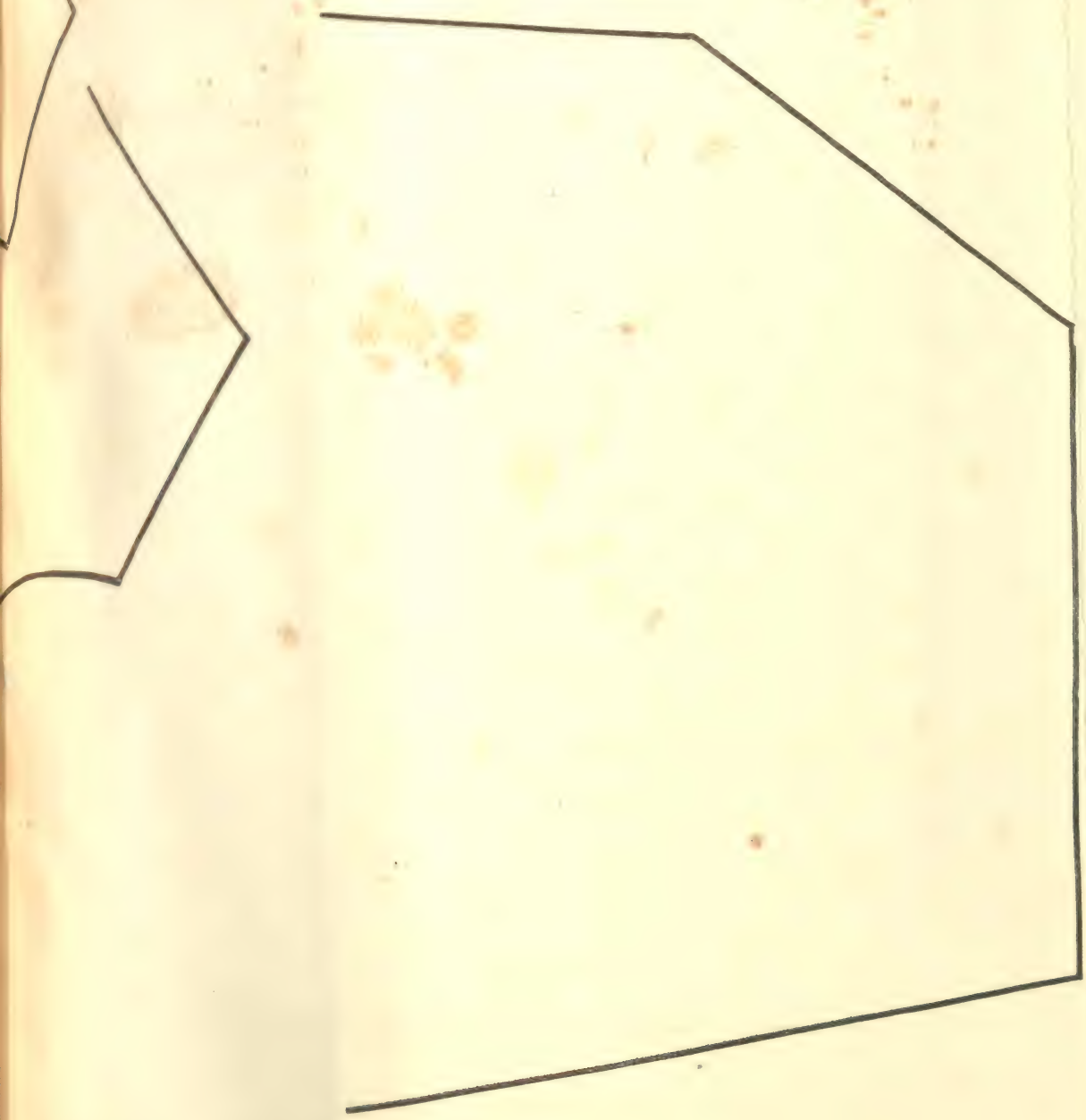
10 × 6 inches.

Sections req

MACFARLANE'S PATENT.

No. 38 ORNAMENTAL GUTTER.

6 × 4 inches.

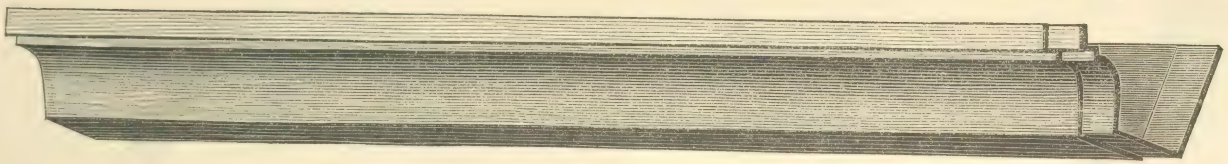


6 × 4½ inches.

side measure.

MACFARLANE'S PATENT.

No. 40 ORNAMENTAL GUTTER.

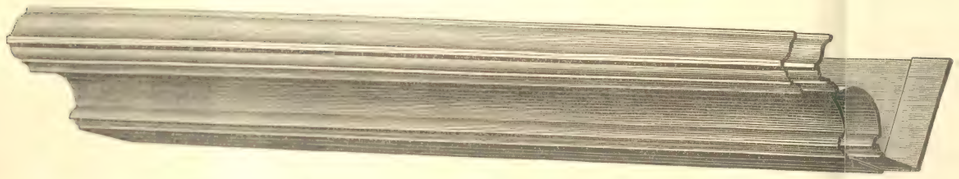


$7 \times 4\frac{1}{2}$ inches.

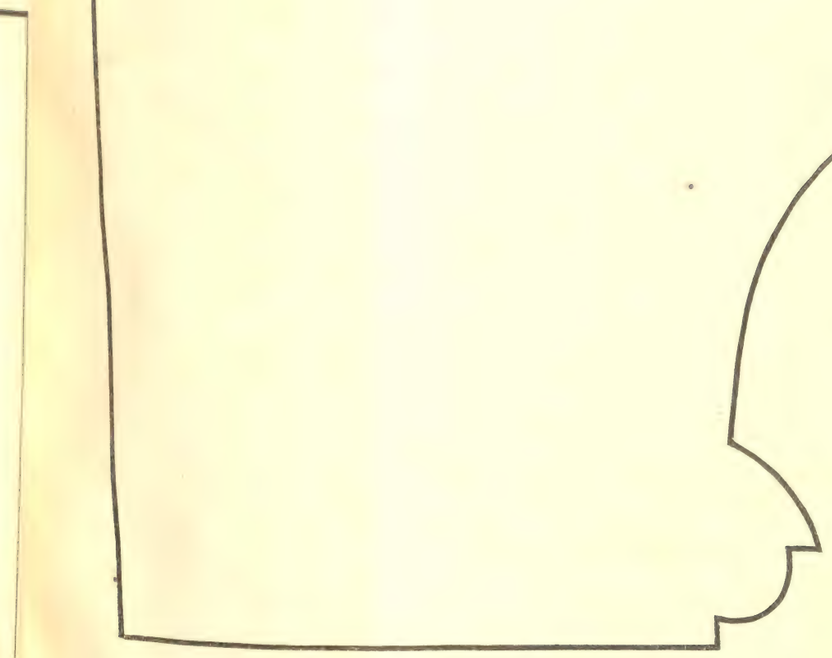
Section real Size,—outside measure.

MACFARLANE'S PATENT.

No. 42 ORNAMENTAL GUTTERS.



$4\frac{1}{2} \times 3$, $6 \times 4\frac{1}{2}$, 8×6, and 10×6 inches.

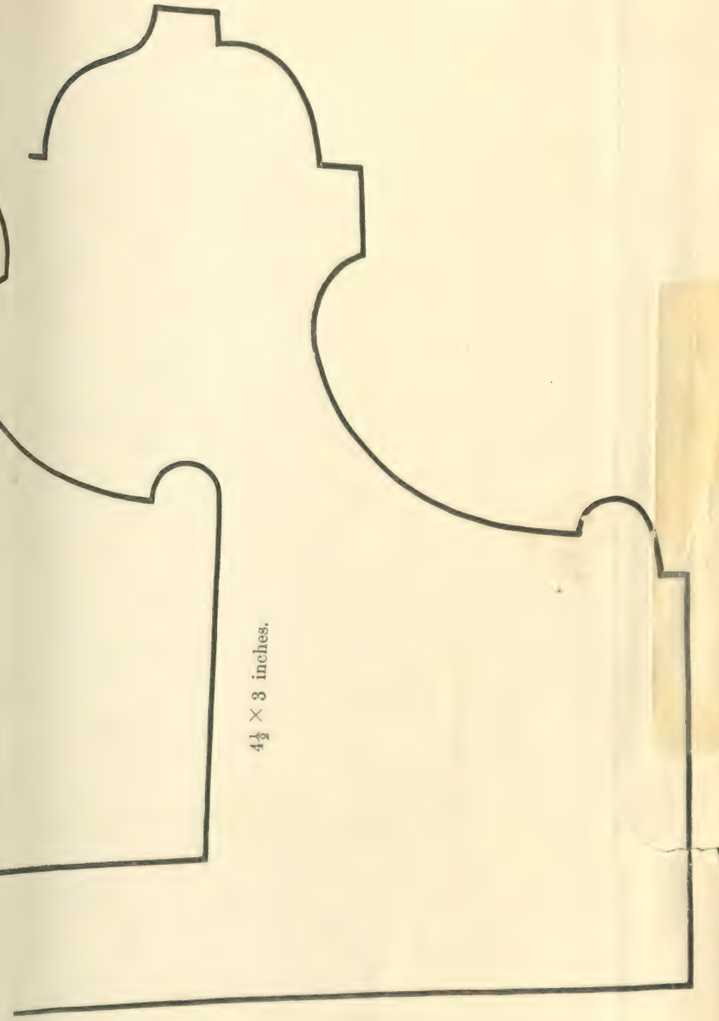


8×6 inches.

10×6 inches.

Sections real Size,—outside measure.

$4\frac{1}{2} \times 3$ inches.

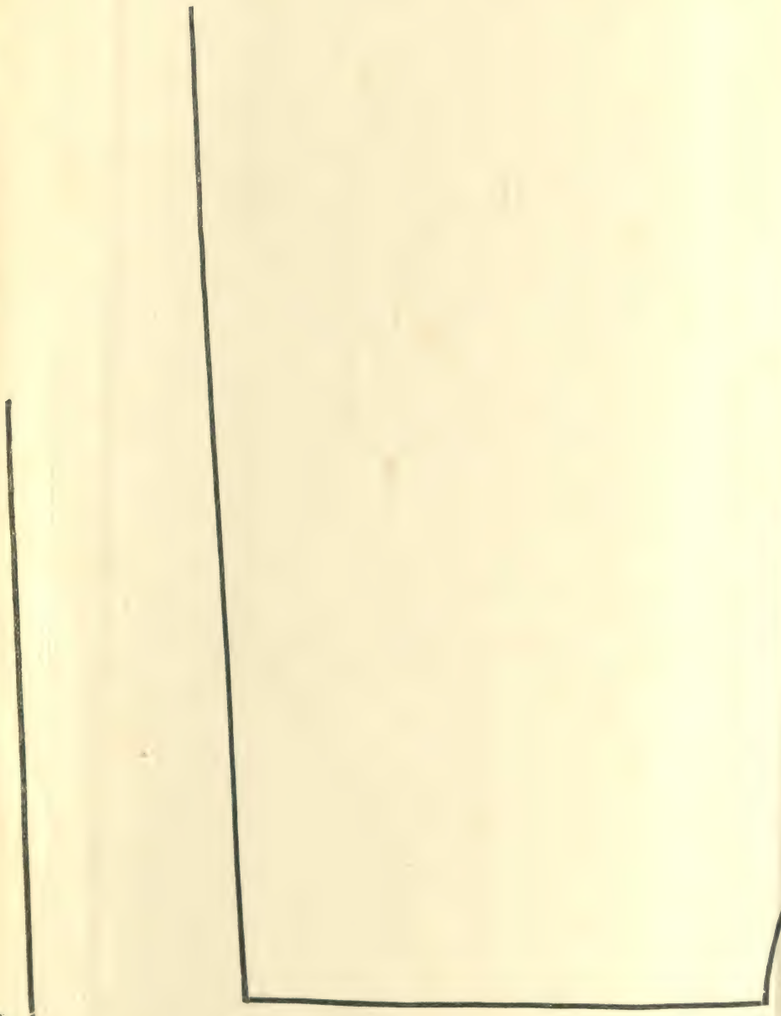


$6 \times 4\frac{1}{2}$ inches.

MACFARLANE'S PATENT.

No. 44 ORNAMENTAL GUTTERS.

$4\frac{1}{2} \times 3\frac{1}{2}$, $6 \times 4\frac{1}{2}$, 8×6, and 10×6 inches.



8×6 inches.

10×6 inches.

Sections real Size,—outside measure.

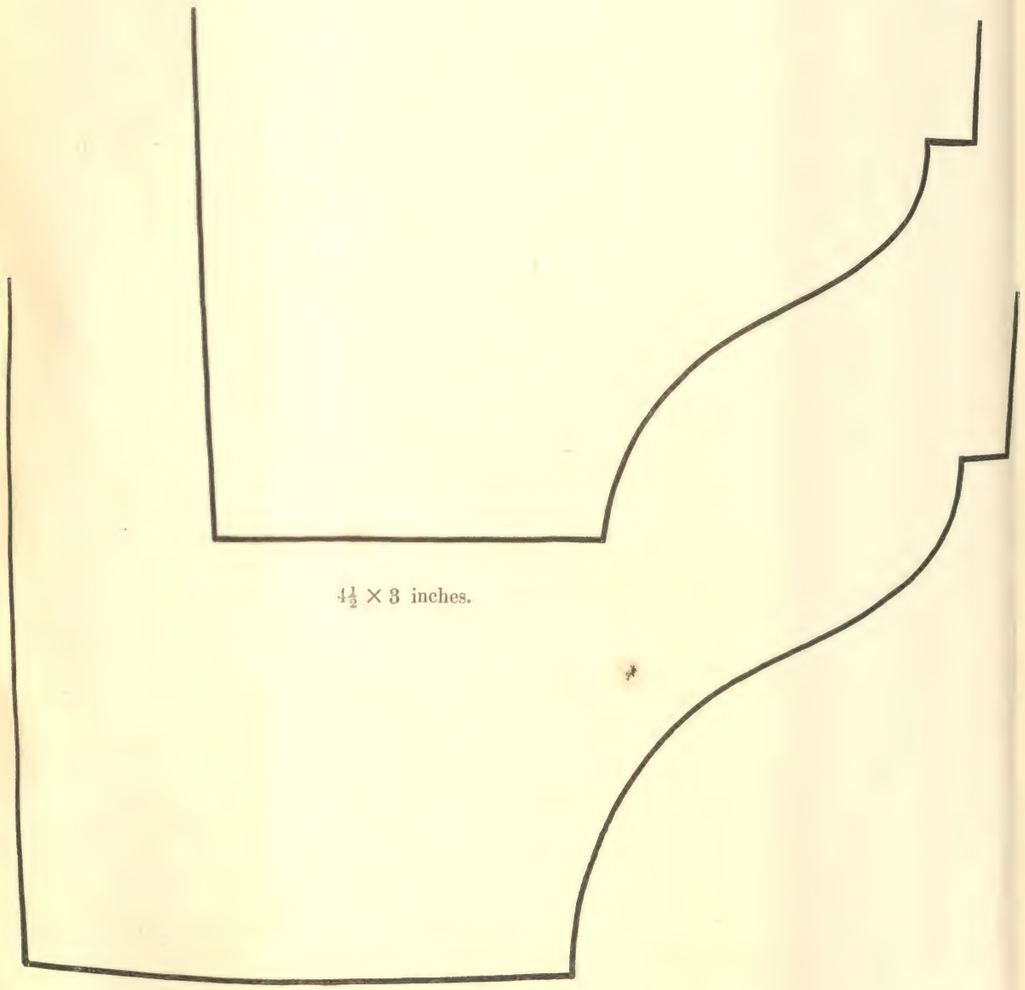
$4\frac{1}{2} \times 3\frac{1}{2}$ inches.

$6 \times 4\frac{1}{2}$ inches.

MACFARLANE'S PATENT.

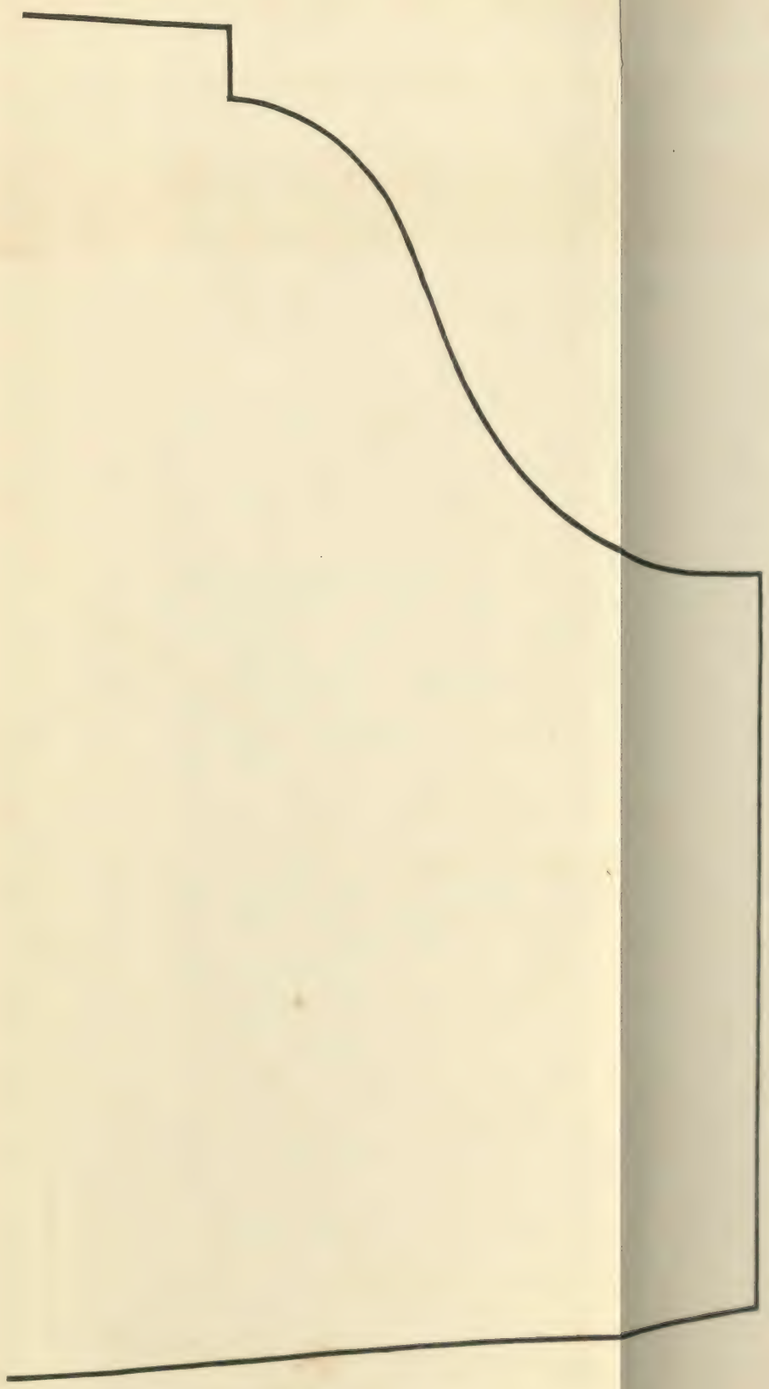
No. 45 ORNAMENTAL GUTTERS.

$4\frac{1}{2} \times 3$, 6×4, and 8×5 inches.



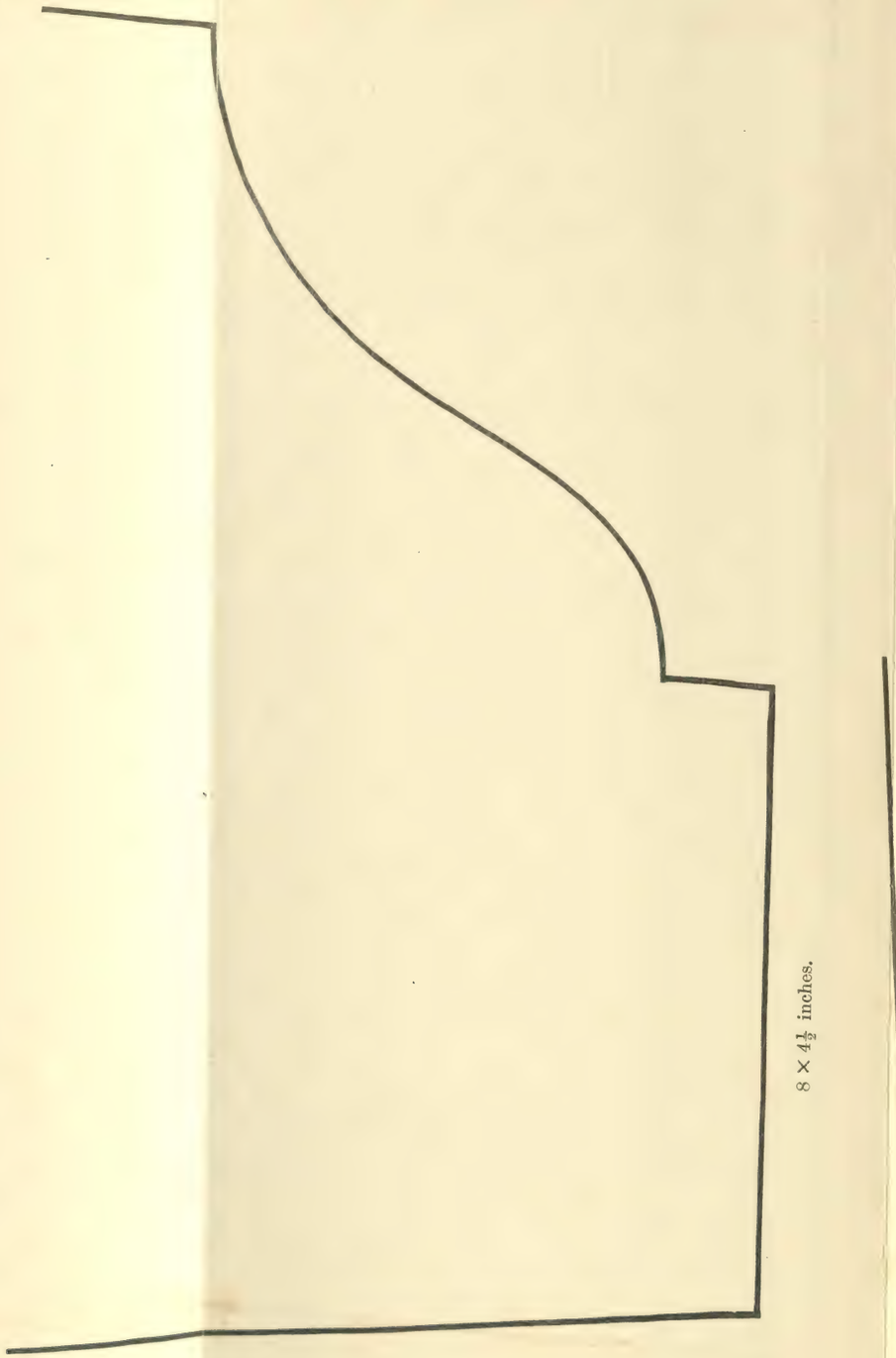
$4\frac{1}{2} \times 3$ inches.

6×4 inches.



8×5 inches.

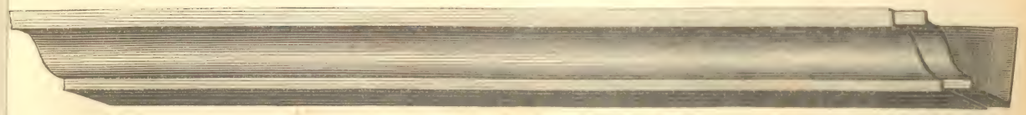
Sections real Size,—outside measure.



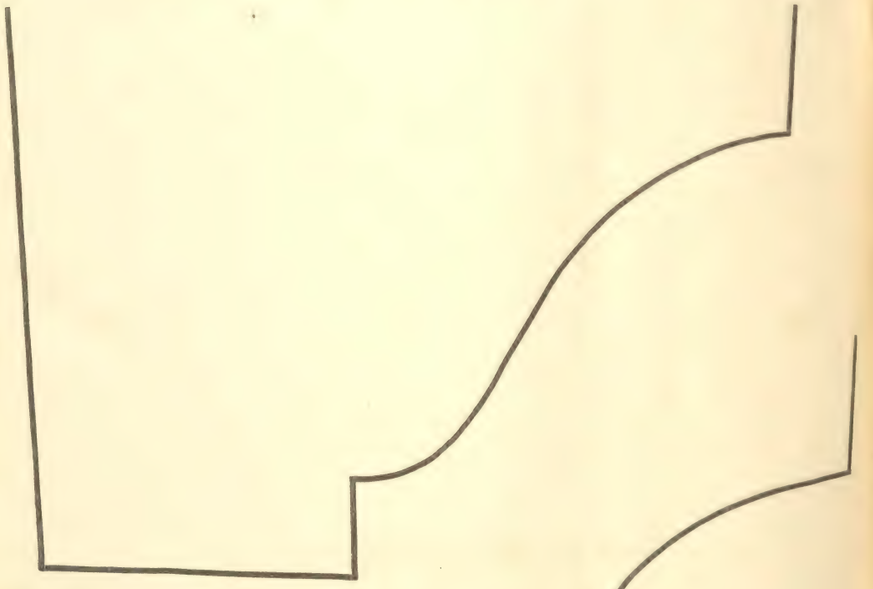
8 × 4½ inches.

MACFARLANE'S PATENT.

No. 46 ORNAMENTAL GUTTERS.



4½ × 3, 6 × 3½, and 8 × 4½ inches.

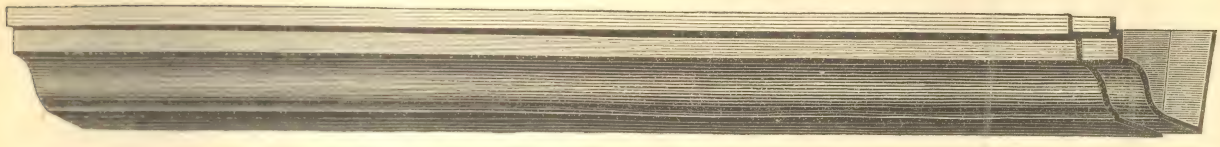


4½ × 3 inches.

6 × 3½ inches.

Sections real Size,—outside measure.

No. 47 ORNAMENTAL GUTTER.

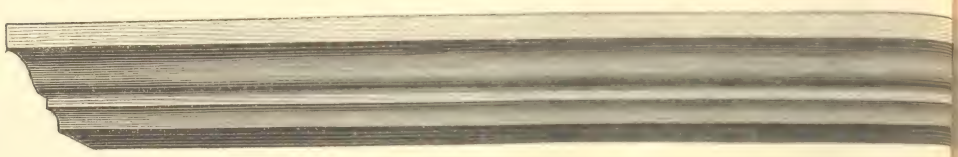


$6 \times 4\frac{1}{2}$ inches.

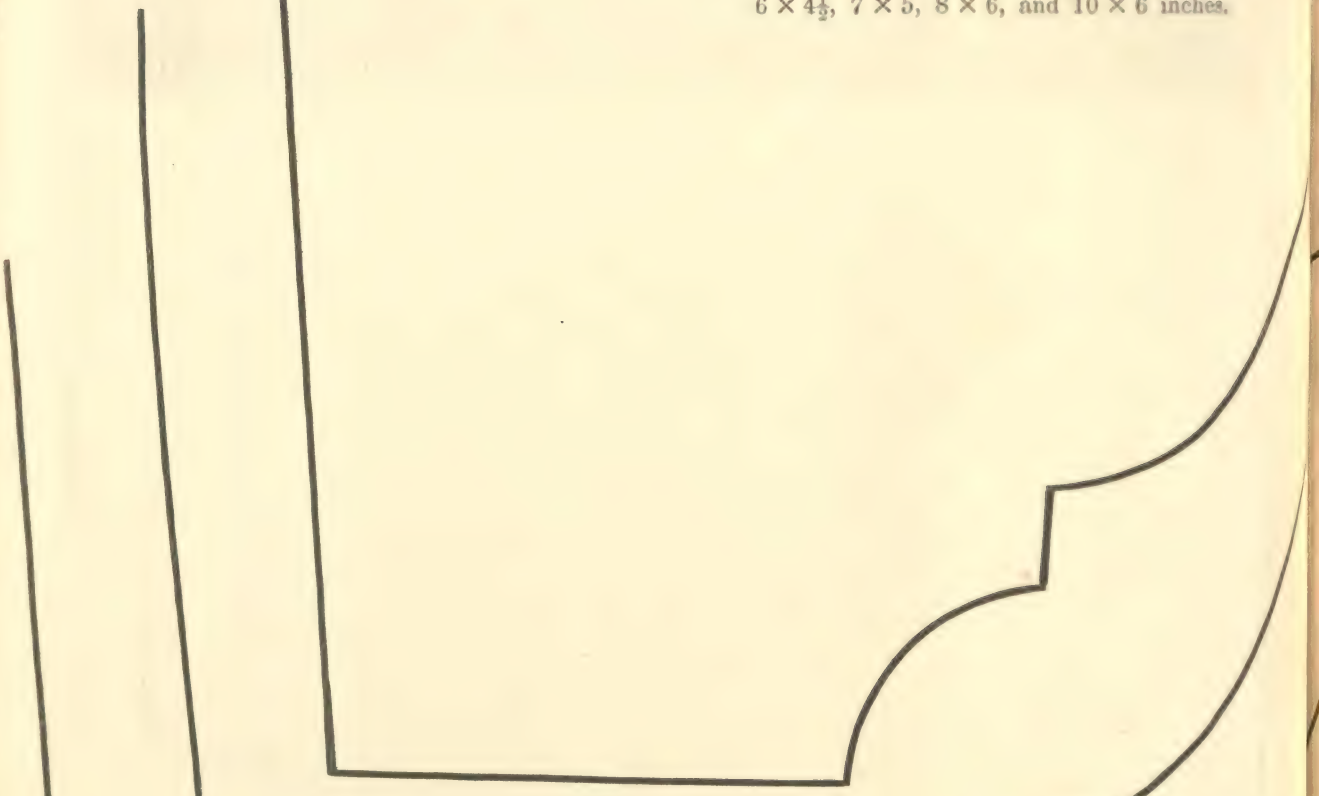
Section real Size,—outside measure.

MACFARLANE'S PATENT.

No. 48 ORNAMENTAL GUTTERS.



$6 \times 4\frac{1}{2}$, 7×5, 8×6, and 10×6 inches.



7×5 inches.

8×6 inches.

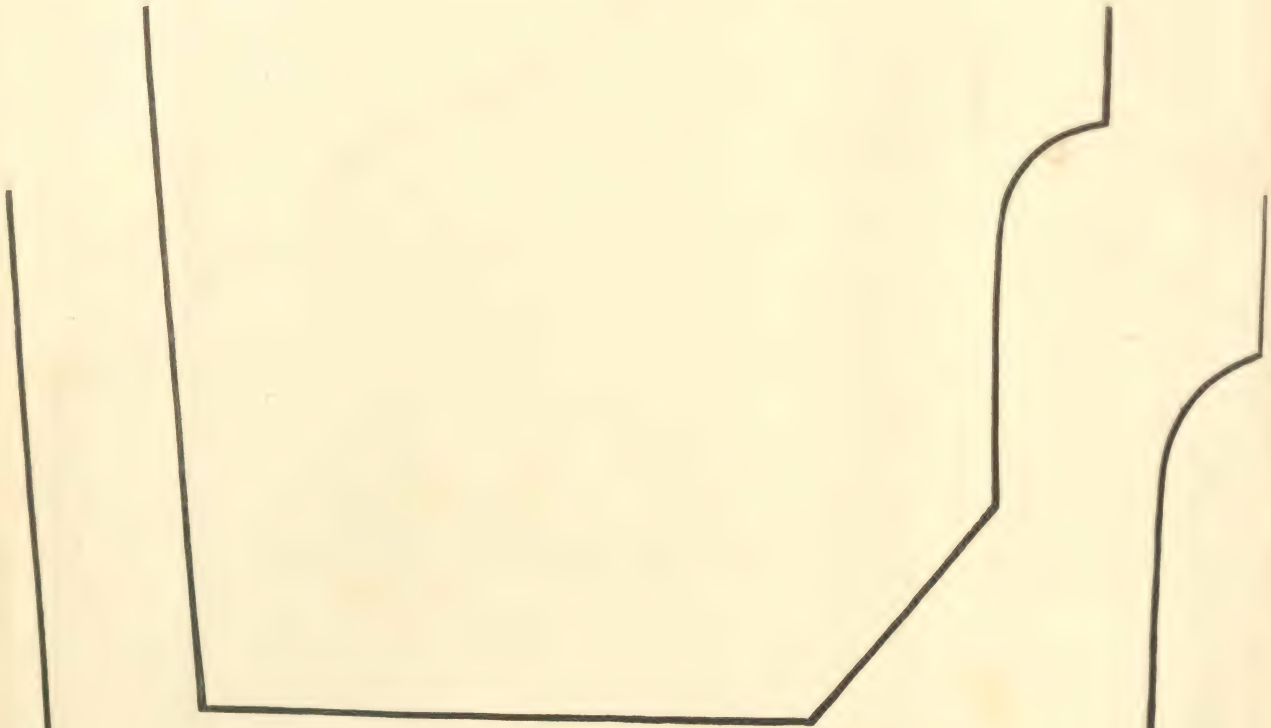
10×6 inches.

6 × 4½ inches.

MACFARLANE'S PATENT.

No. 49 ORNAMENTAL GUTTERS.

$4\frac{1}{2} \times 3\frac{1}{2}$, $6 \times 4\frac{1}{2}$, and 8×6 inches.



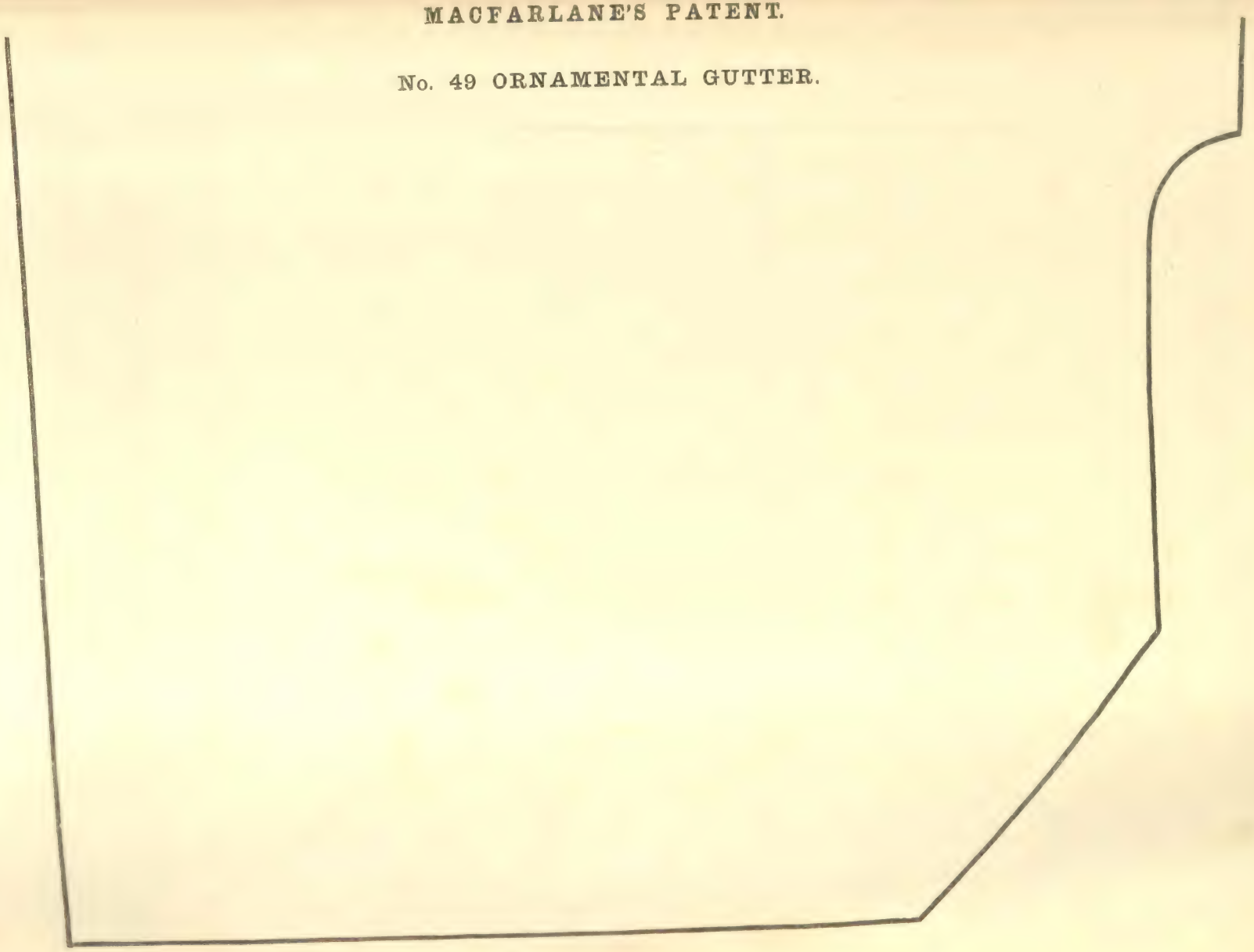
$4\frac{1}{2} \times 3\frac{1}{2}$ inches.

$6 \times 4\frac{1}{2}$ inches.

Sections real Size,—outside measure.

MACFARLANE'S PATENT.

No. 49 ORNAMENTAL GUTTER.

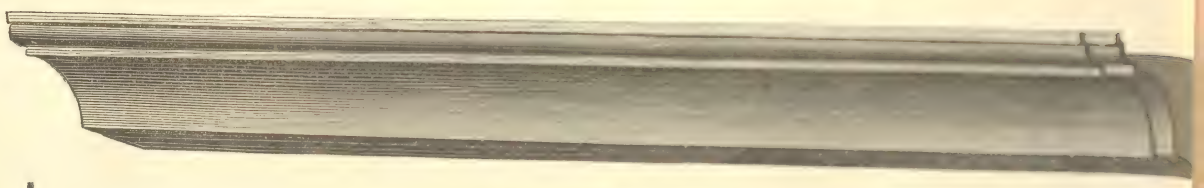


8 × 6 inches.

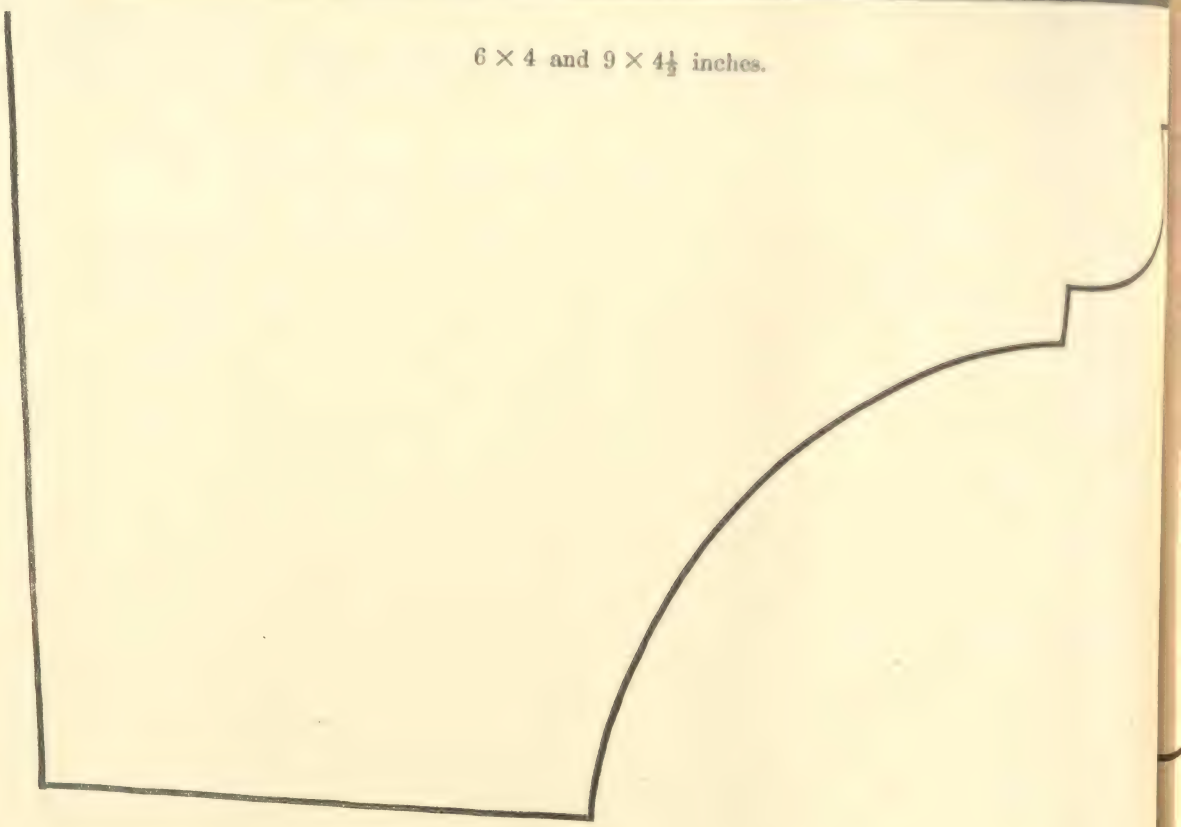
Section real Size,—outside measure.

MACFARLANE'S PATENT.

No. 50 ORNAMENTAL GUTTERS.



6 × 4 and 9 × 4½ inches.



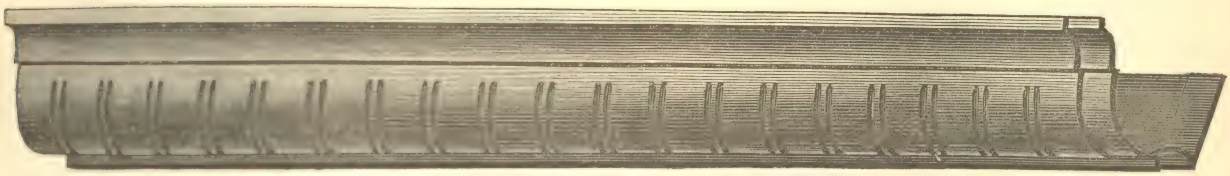
6 × 4 inches.

9 × 4½ inches.

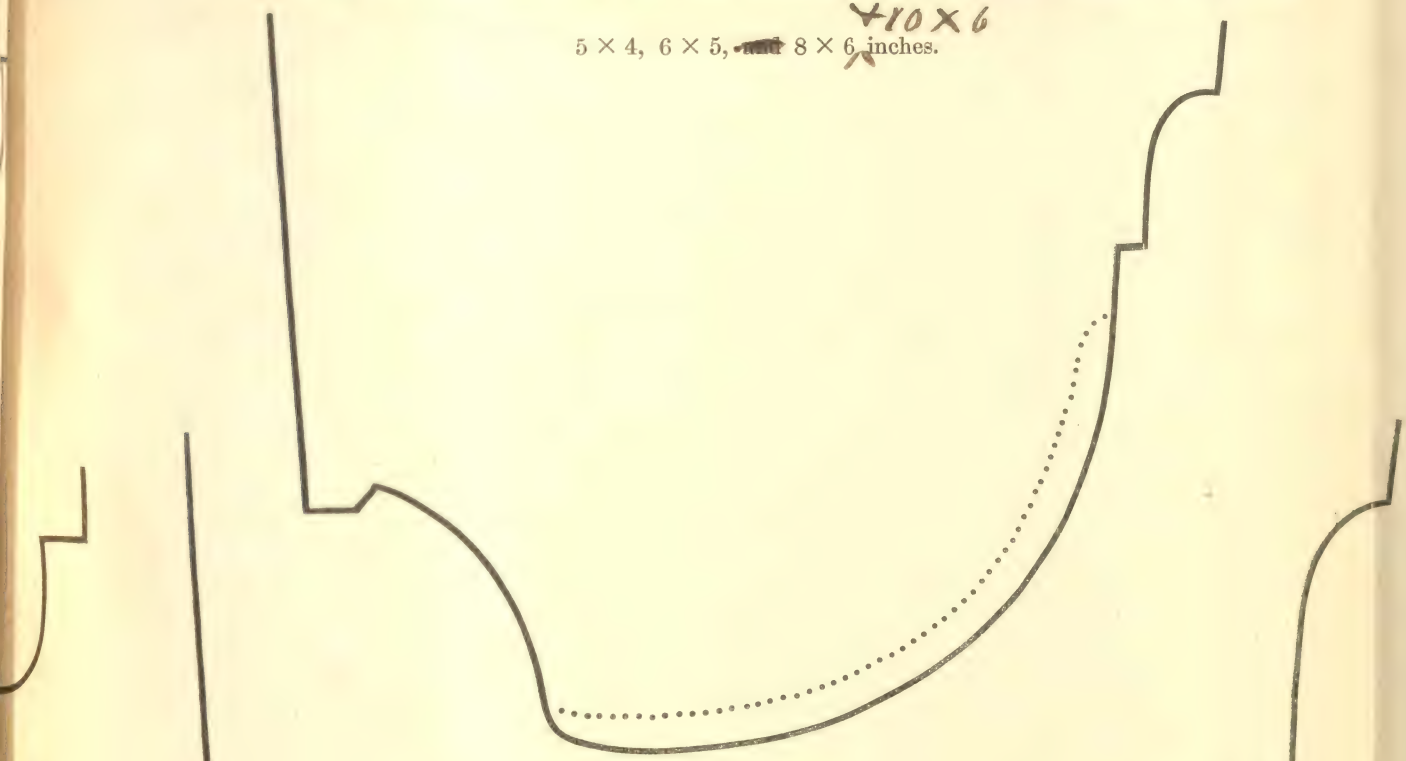
Sections real Size,—outside measure.

MACFARLANE'S PATENT.

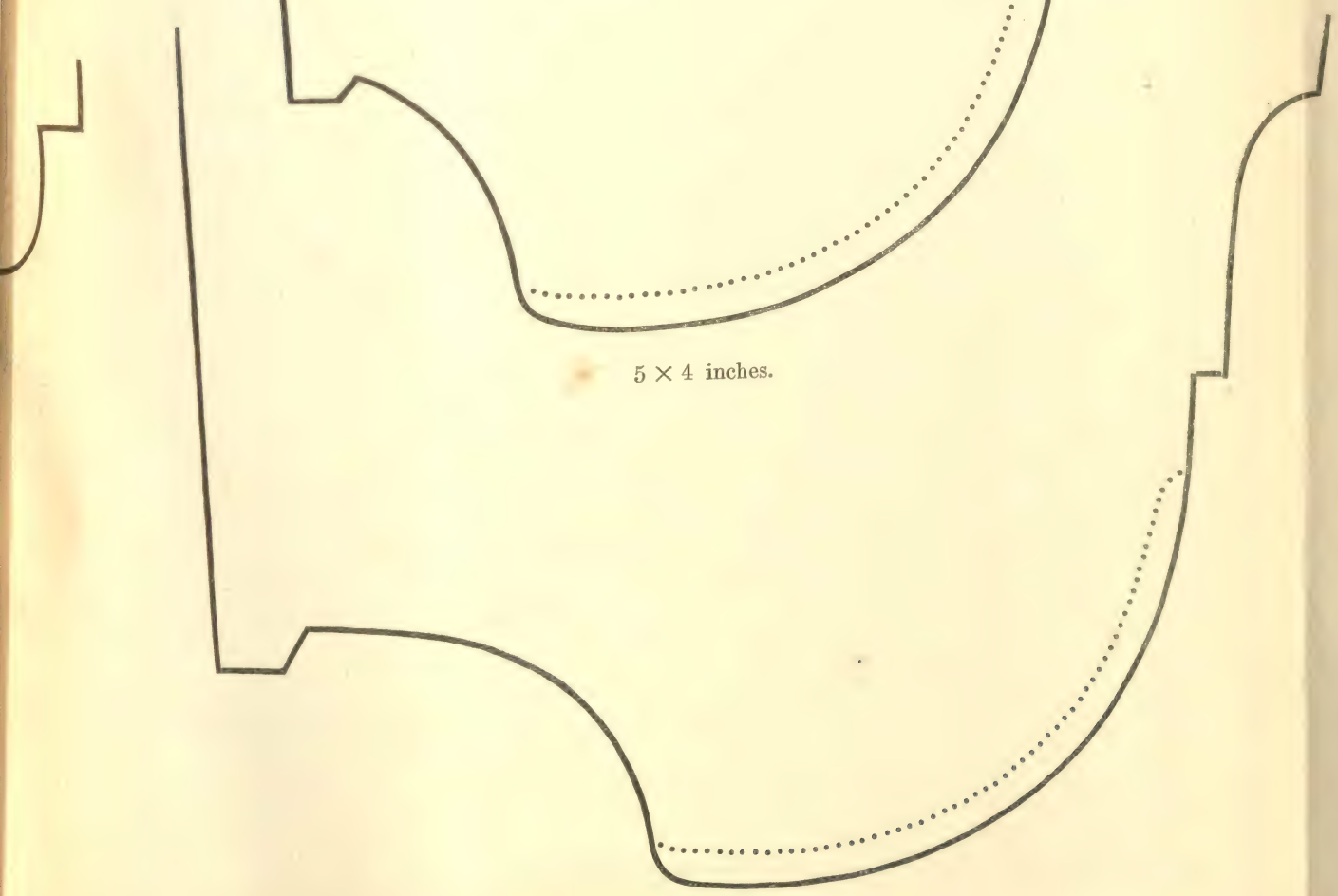
No. 51 ORNAMENTAL GUTTERS.



5 × 4, 6 × 5, ~~and~~ 8 × 6 inches. 10 × 6



5 × 4 inches.

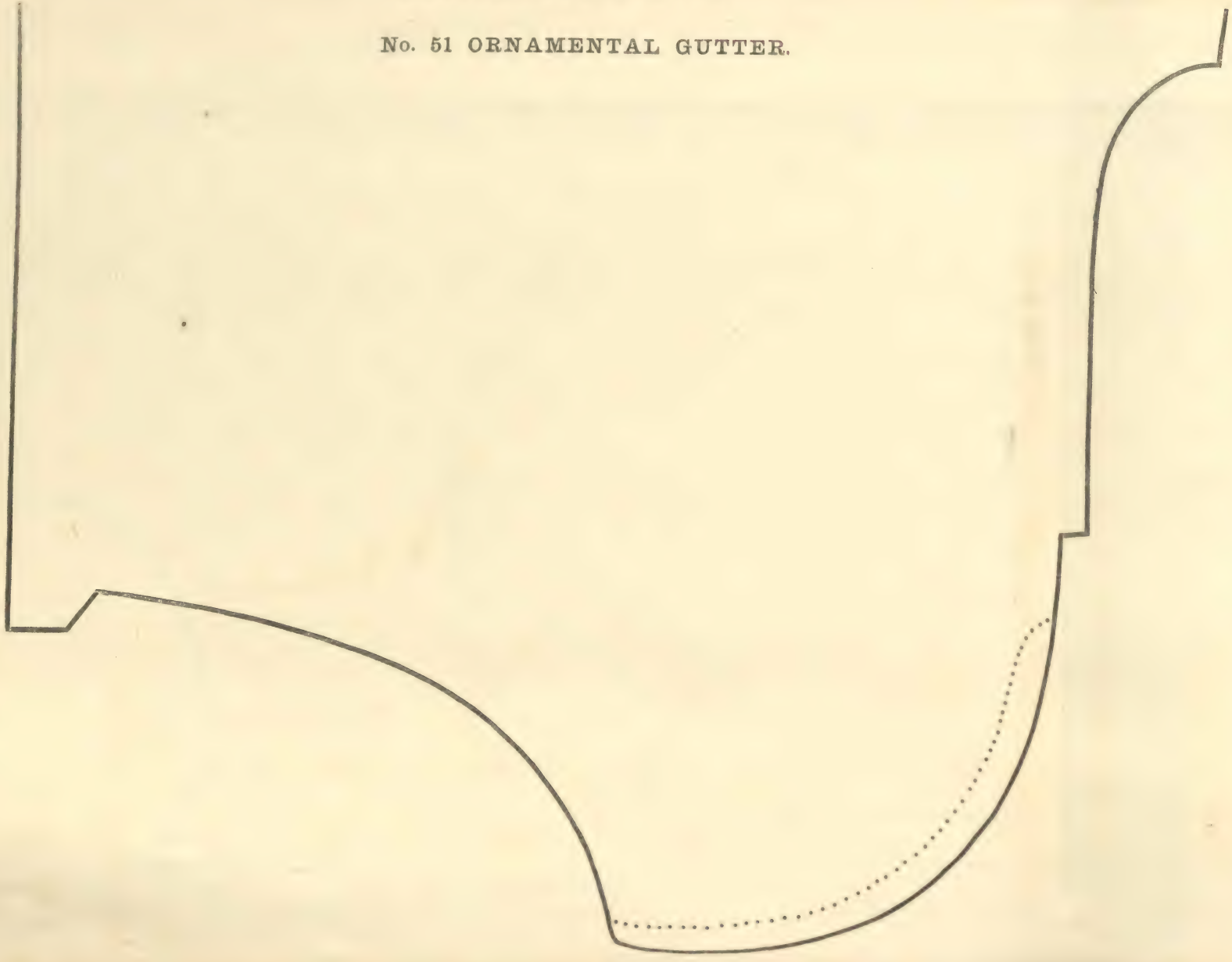


6 × 5 inches.

Sections real Size,—outside measure.

MACFARLANE'S PATENT.

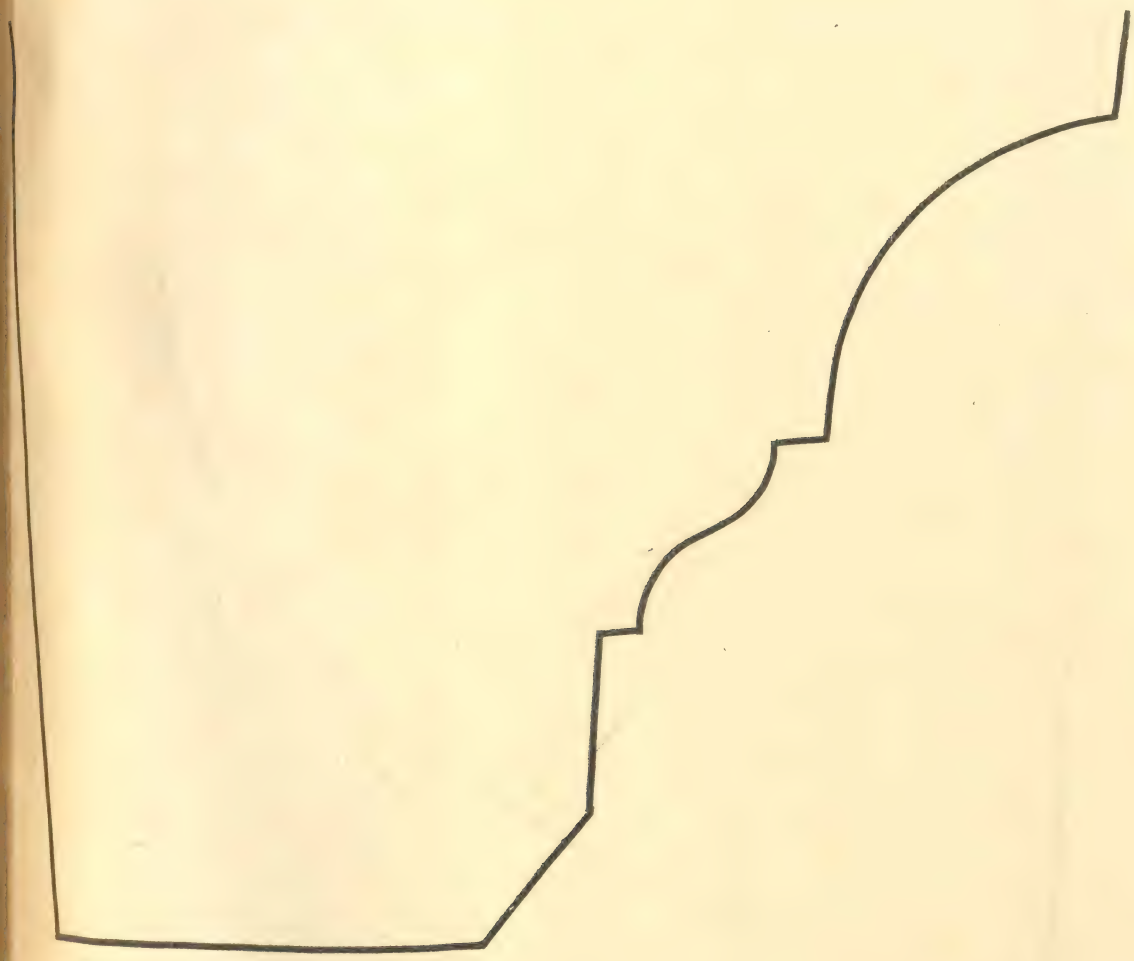
No. 51 ORNAMENTAL GUTTER.



8 × 6 inches.

No. 52 ORNAMENTAL GUTTER.

6 × 5 inches.



Section real Size,—outside measure.

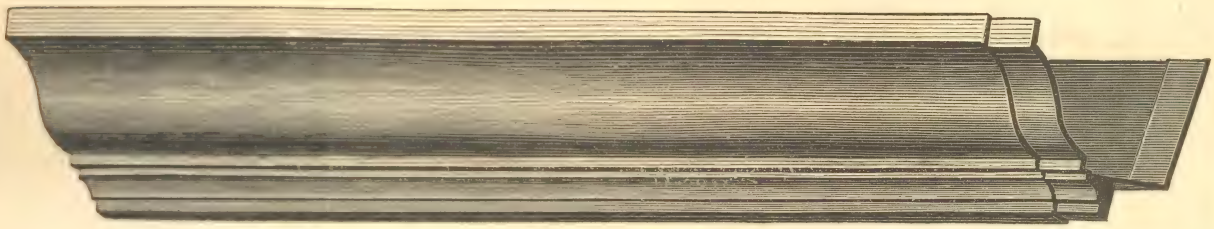
No. 53 ORNAMENTAL GUTTER.

5½ × 5 inches.

Section real Size,—outside measure.

MACFARLANE'S PATENT.

No. 54 ORNAMENTAL GUTTER.

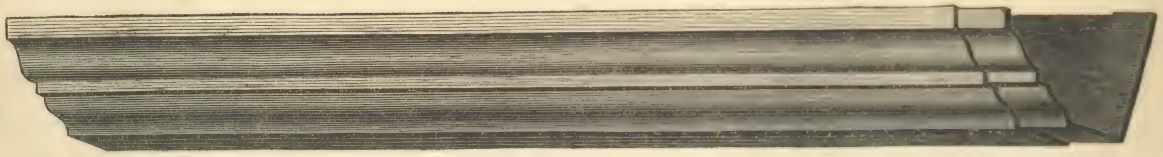


9 × 8 inches.

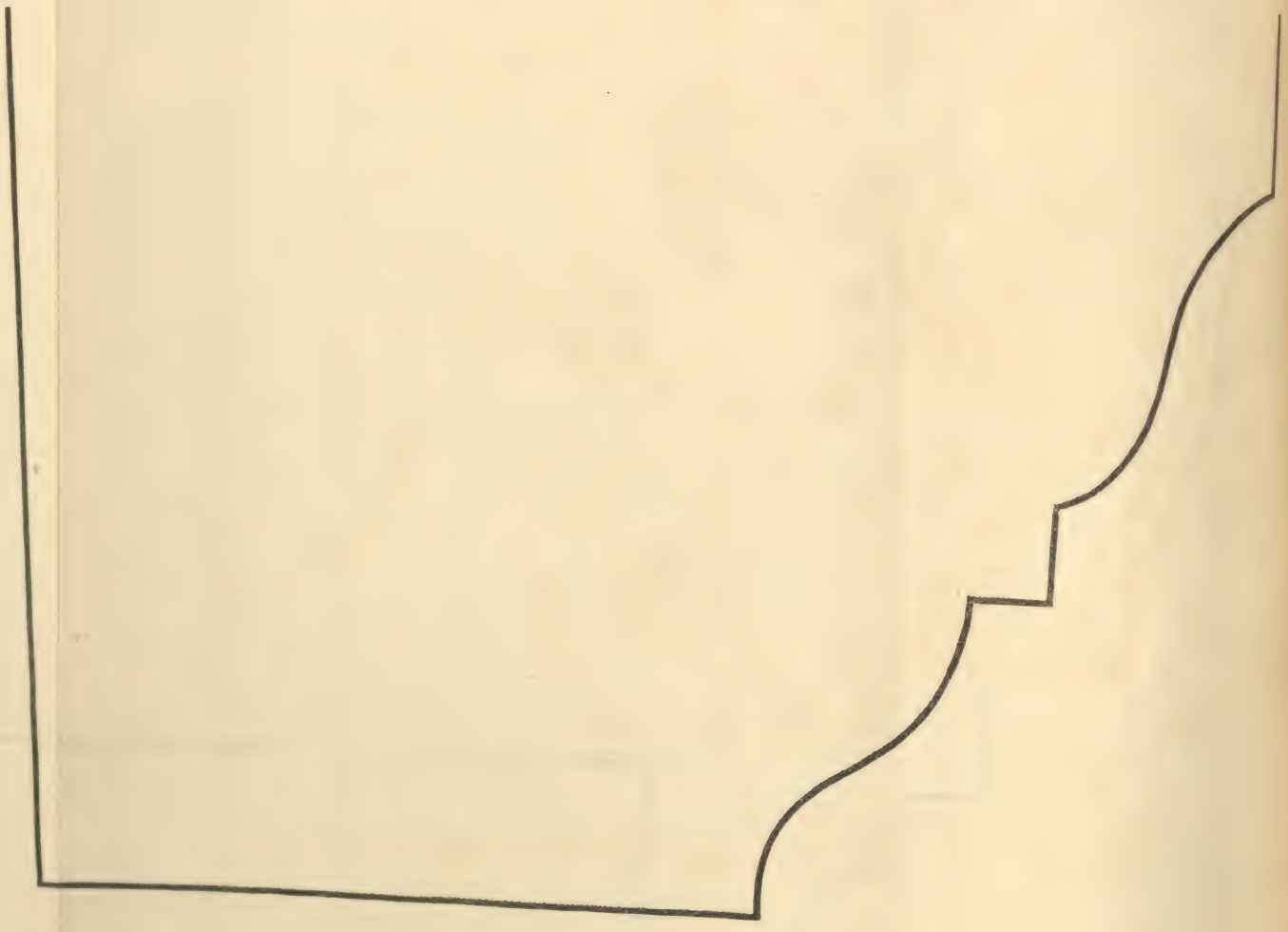
Section real Size,—outside measure.

MACFARLANE'S PATENT.

No. 55 ORNAMENTAL GUTTER.



7 × 5 inches.



Section real Size,—outside measure.

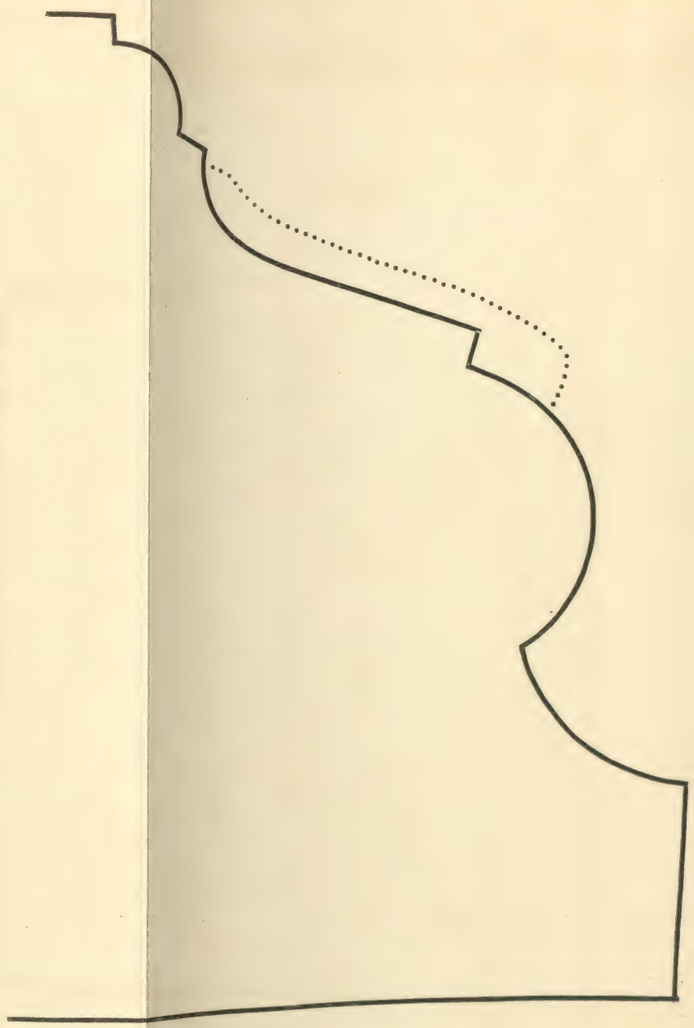
MACFARLANE'S PATENT.

No. 56 ORNAMENTAL GUTTER.

$6 \times 4\frac{1}{2}$, 8×6, and 10×6 inches.

8×6 inches.

10×6 inches.

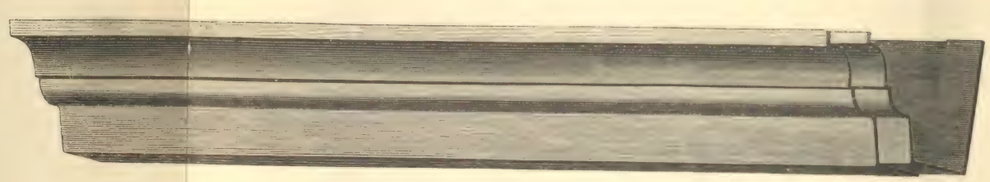


$6 \times 4\frac{1}{2}$ inches.

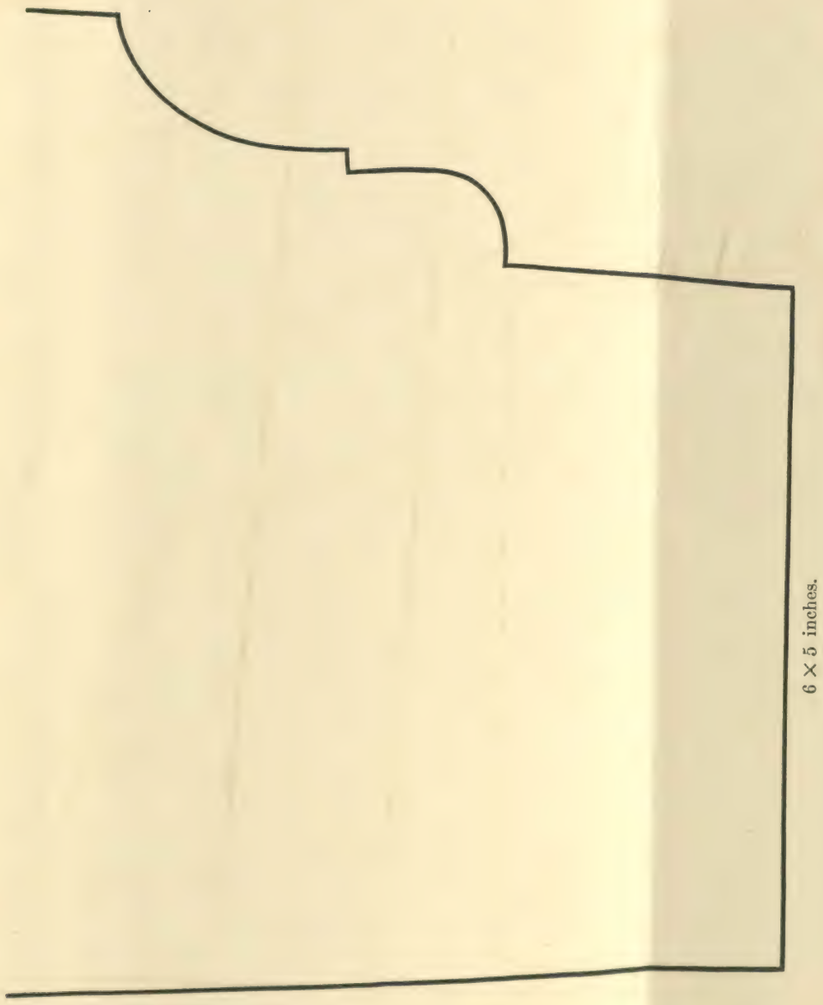
Sections real Size,—outside measure.

MACFARLANE'S PATENT.

No. 57 ORNAMENTAL GUTTER.



6 × 5, 8 × 7, and 10 × 7 inches.



6 × 5 inches.

8 × 7 inches.

10 × 7 inches.

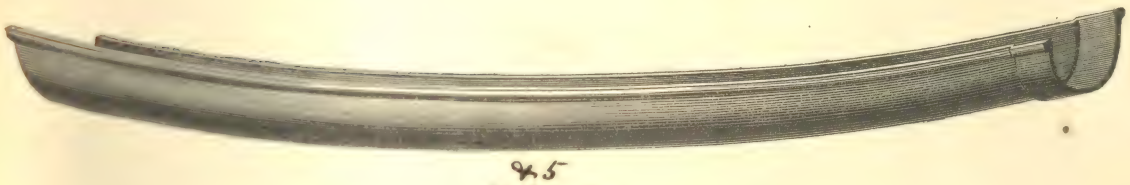
Sections real Size,—outside measure.

CIRCULAR GUTTERS.

With the view of making our Gutter Section as complete as possible we have introduced the following patterns and sizes of Circular Gutters, and we can supply them to fit the smallest turret as well as for the largest description of circular buildings.

All our patterns of Circular Gutters range with the corresponding Nos. of our Straight Gutters. The same Ornaments, Brackets, and Connections are also suitable for both kinds.—See pages 82 to 89.

No. 2 CIRCULAR GUTTER.

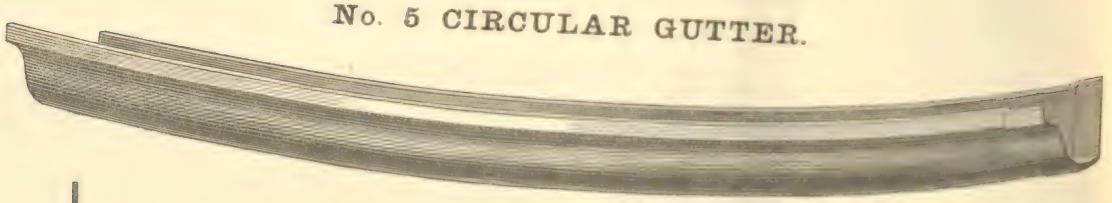


4 4½ inches.

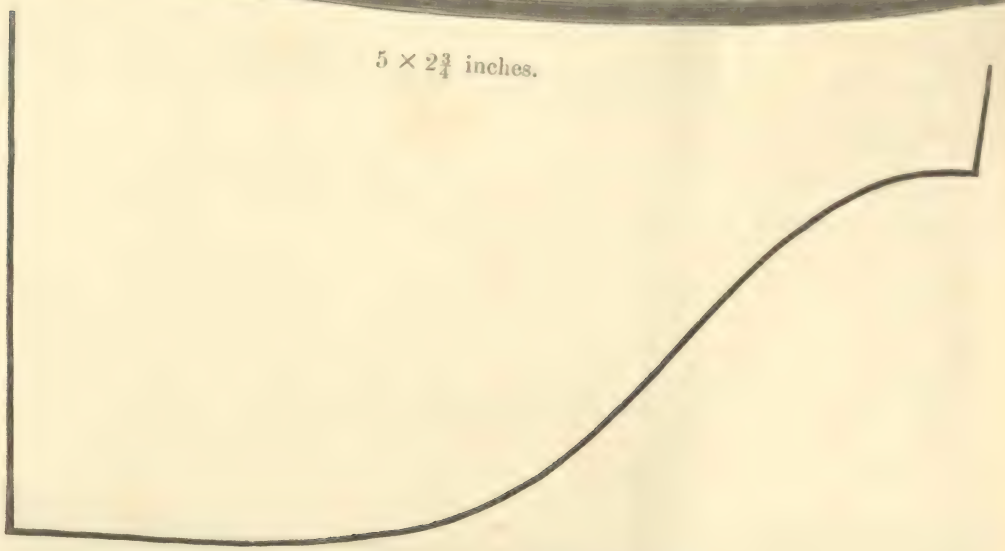
Section real Size,—outside measure.

MACFARLANE'S PATENT.

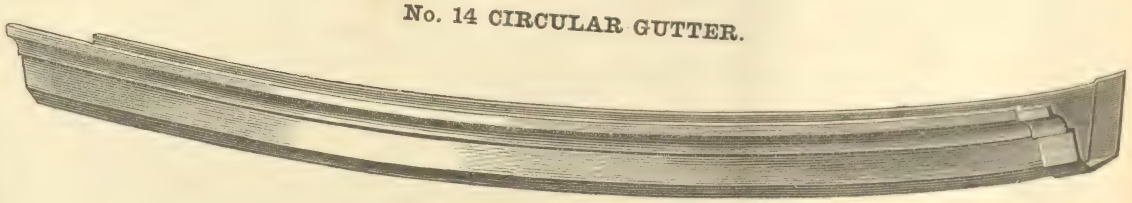
No. 5 CIRCULAR GUTTER.



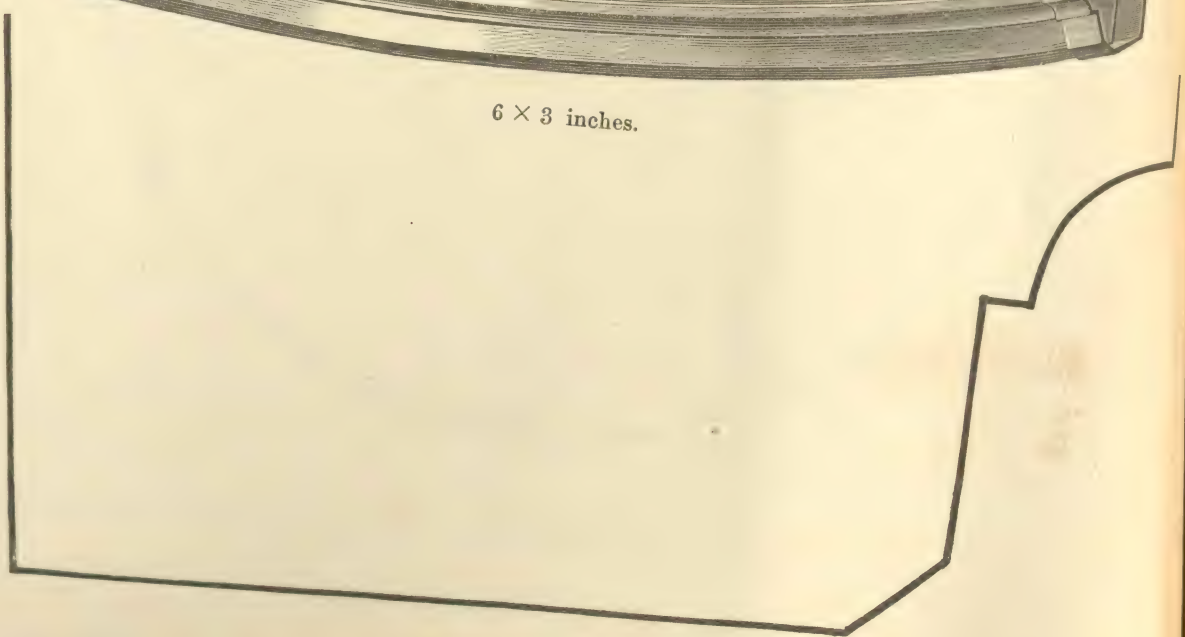
$5 \times 2\frac{3}{4}$ inches.



No. 14 CIRCULAR GUTTER.

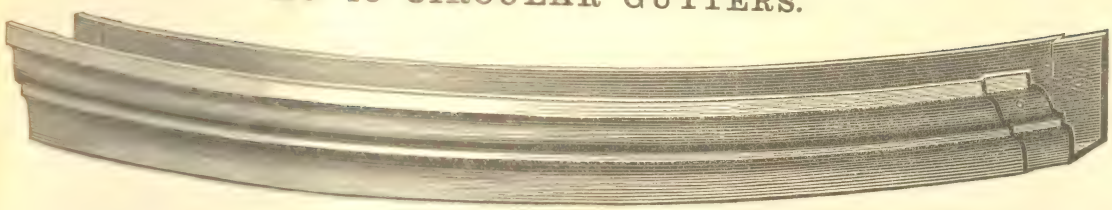


6×3 inches.



Sections real Size,—outside measure.

No. 10 CIRCULAR GUTTERS.



$4\frac{1}{2} \times 3\frac{1}{2}$, and $6 \times 4\frac{1}{2}$ inches.

$4\frac{1}{2} \times 3\frac{1}{2}$ inches.

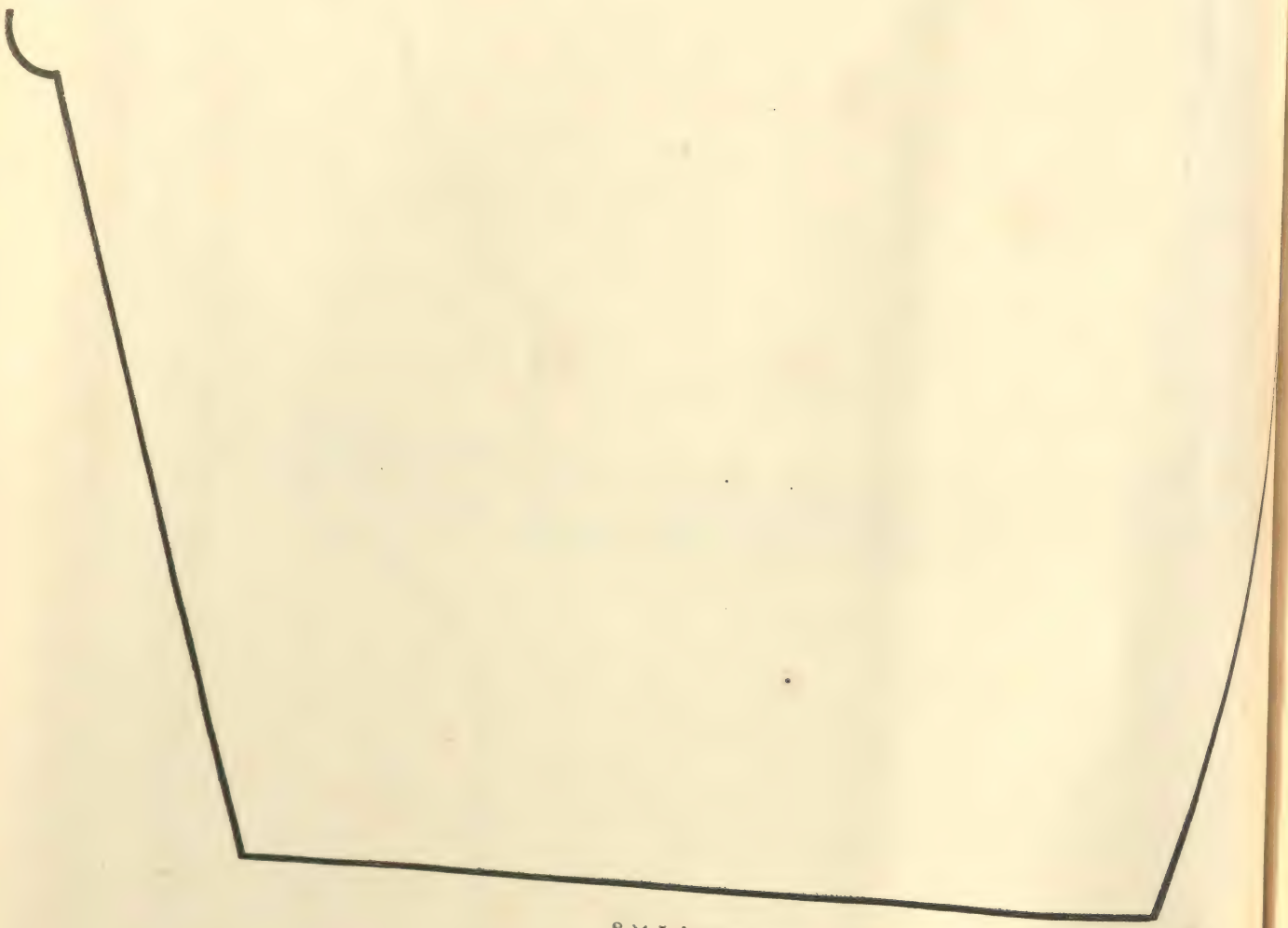
$6 \times 4\frac{1}{2}$ inches.

Sections real Size,—outside measure.

MACFARLANE'S PATENT.

No. 18 BOUNDARY WALL GUTTER.

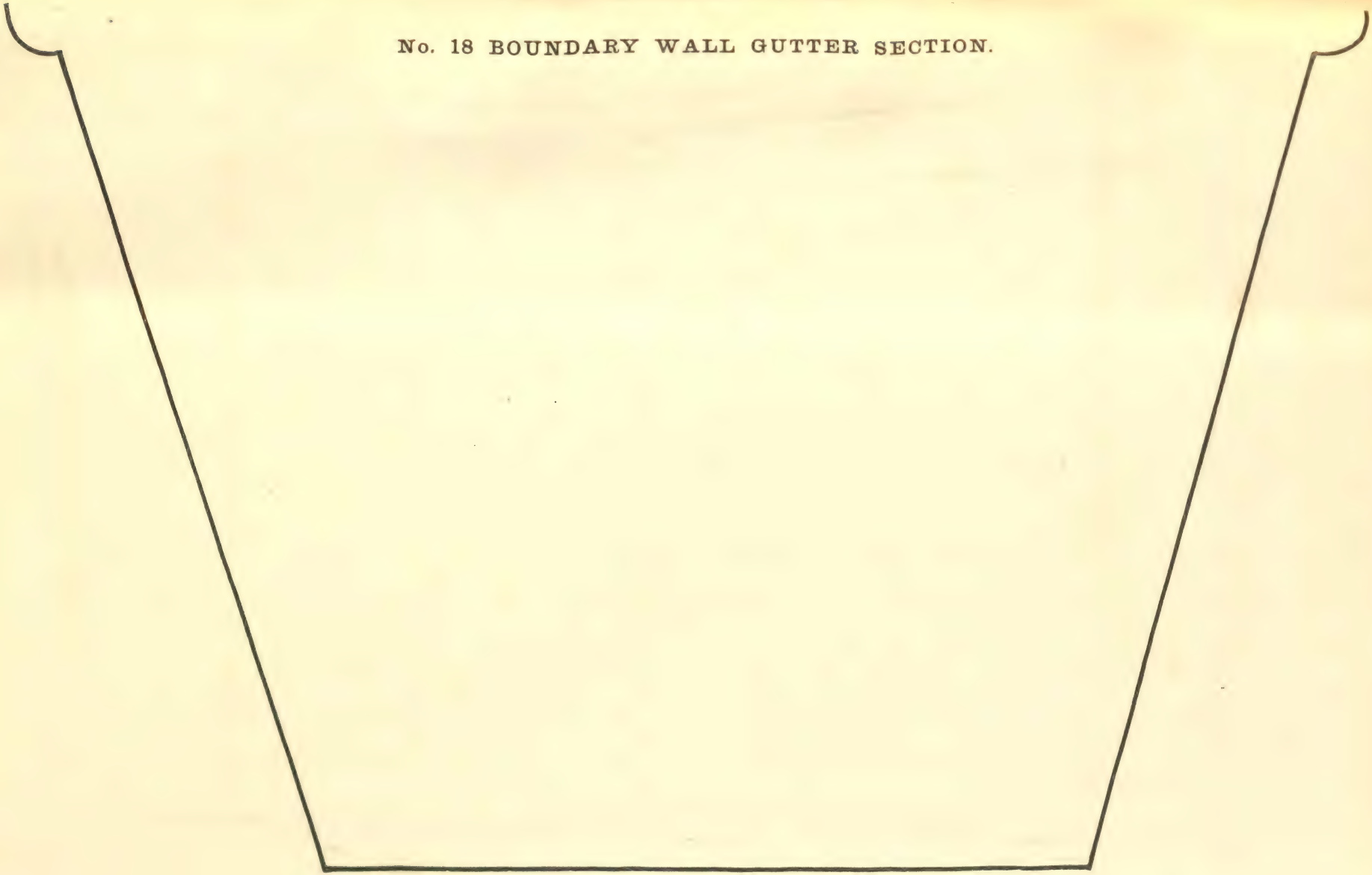
8 × 5, and 9 × 6 inches.



8 × 5 inches.

Section real Size,—outside measure.

No. 18 BOUNDARY WALL GUTTER SECTION.



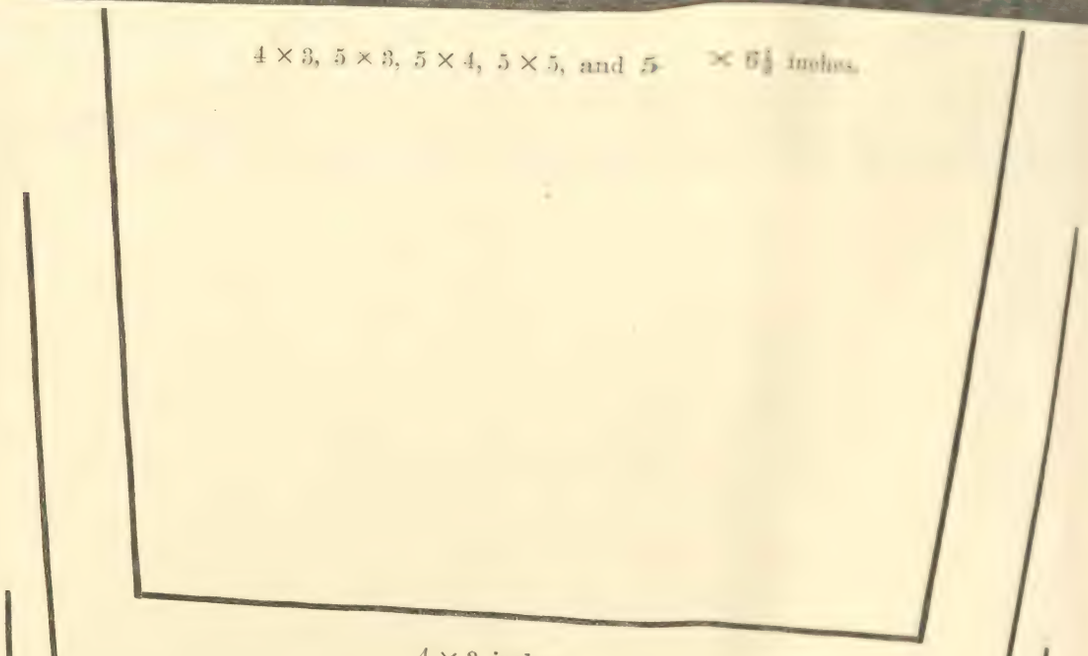
9 × 6 inches.

Section real Size,—outside measure.

MACFARLANE'S PATENT.

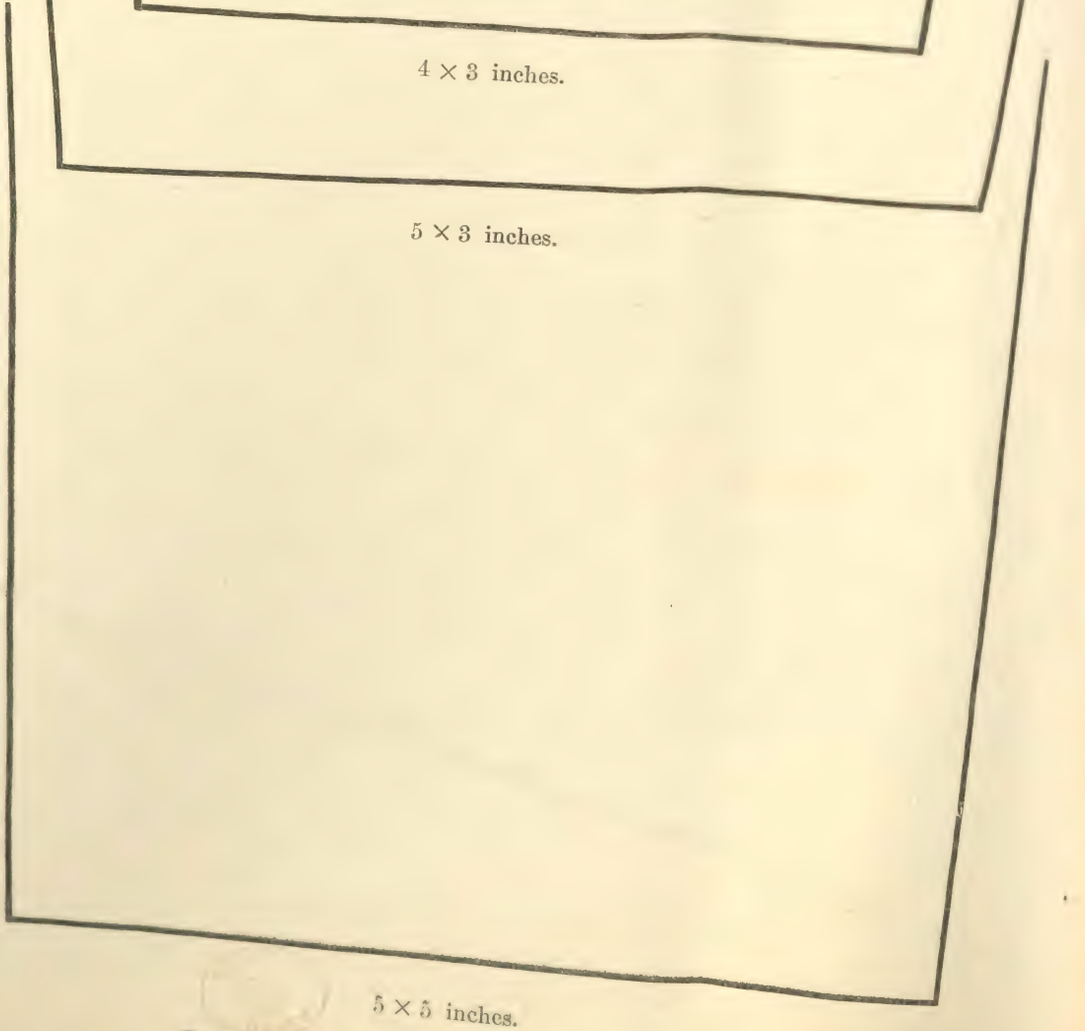
No. 25 BOUNDARY WALL GUTTER.

4 × 3, 5 × 3, 5 × 4, 5 × 5, and 5 × 6½ inches.



4 × 3 inches.

5 × 3 inches.

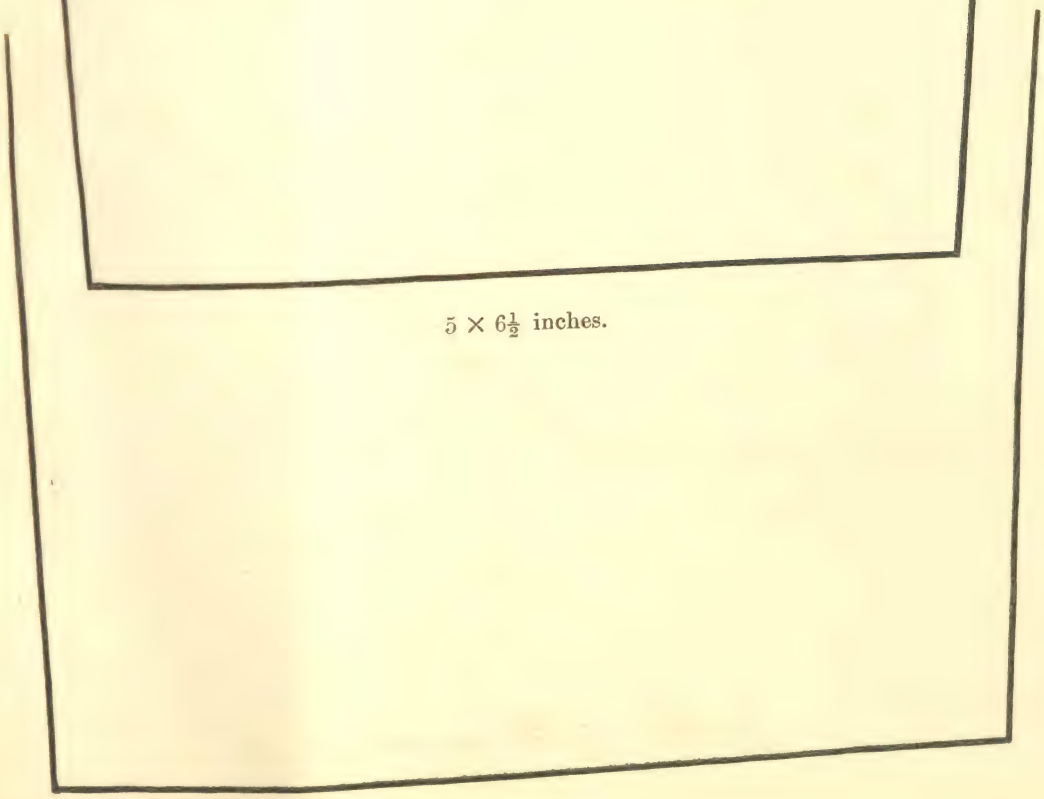


5 × 5 inches.

Sections real Size,—outside measure.

No. 25 BOUNDARY WALL GUTTER.

$5 \times 6\frac{1}{2}$ inches.



5×4 inches.

Sections real Size,—outside measure.

MACFARLANE'S PATENT.

No. 28 BOUNDARY WALL GUTTER.

7 × 3, 10 × 4, and 13 × 5 inches.

7 × 3 inches.

Section real Size,—outside measure.

No. 28 BOUNDARY WALL GUTTERS.

10 × 4 inches.

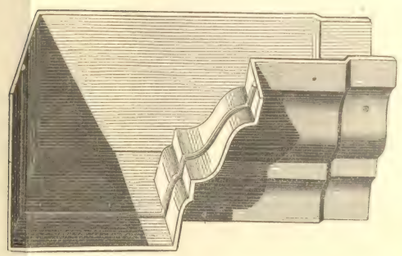
13 × 5 inches.

Sections real Size,—outside measure.

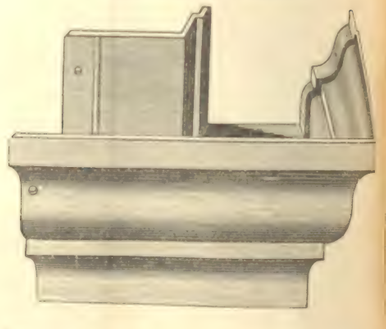
MACFARLANE'S

ORNAMENTAL GUTTER CONNECTIONS.

INTERNAL ANGLE.

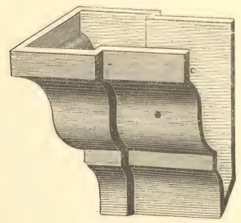


EXTERNAL ANGLE.

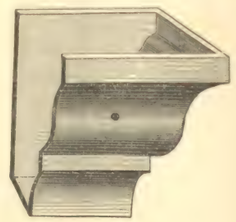


We make any pattern of Angle for every description of Oriel Window, and to any particular bevel, *to order*, on being furnished with the measurements.

ORNAMENTAL SPIGOT STOP END.

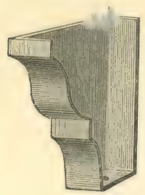


ORNAMENTAL FAUCET STOP END.

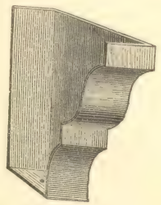


Every separate stretch of Gutter should have these connections, they add so much to the finished appearance of the Gutter cornice.

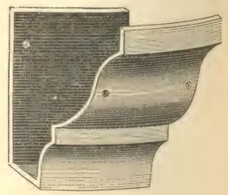
PLAIN SPIGOT STOP END.



PLAIN FAUCET STOP END.



UNION CLIP.

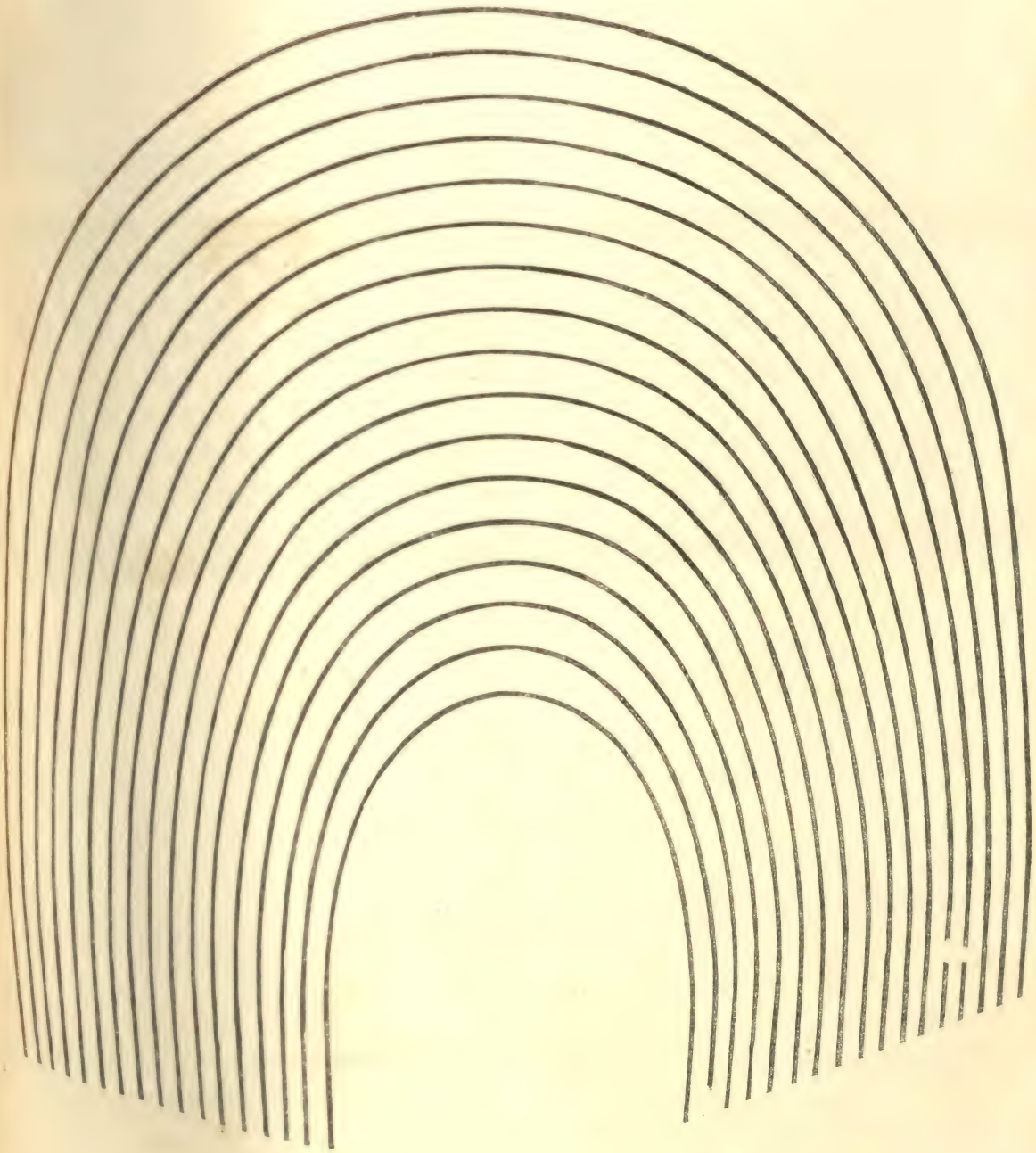


For joining short pieces of Gutter.

We can supply the above connections for every pattern and size of Gutter in our Catalogue.

Scale, 2 inches,—1 foot.

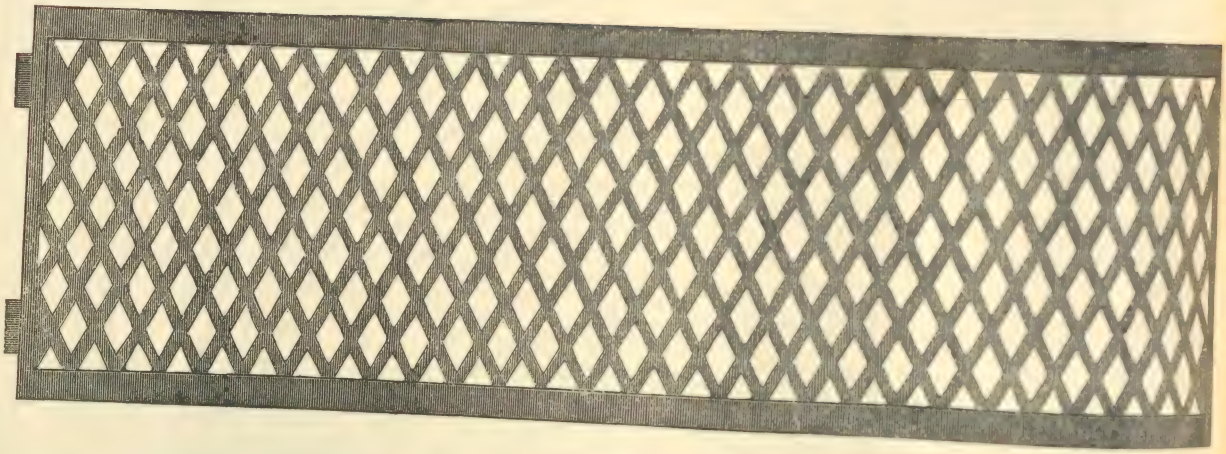
GUTTER GRATINGS.



2, 2¼, 2½, 2¾, 3, 3¼, 3½, 3¾, 4, 4¼, 4½, 4¾, 5, 5¼, 5½, 5¾, and 6 inches.

Sections real Size,—outside measure.

GUTTER SNOW GRATE.



6, 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16 inches broad.

A dovetail at the end of each separate casting joins the whole stretch together into one continuous Grating.

This new gutter attachment has been introduced by us for the purpose of preventing the gutter getting choked up with snow, and thereby causing the water to overflow its channel and damage the building.

Scale, 1½ inch—1 foot.

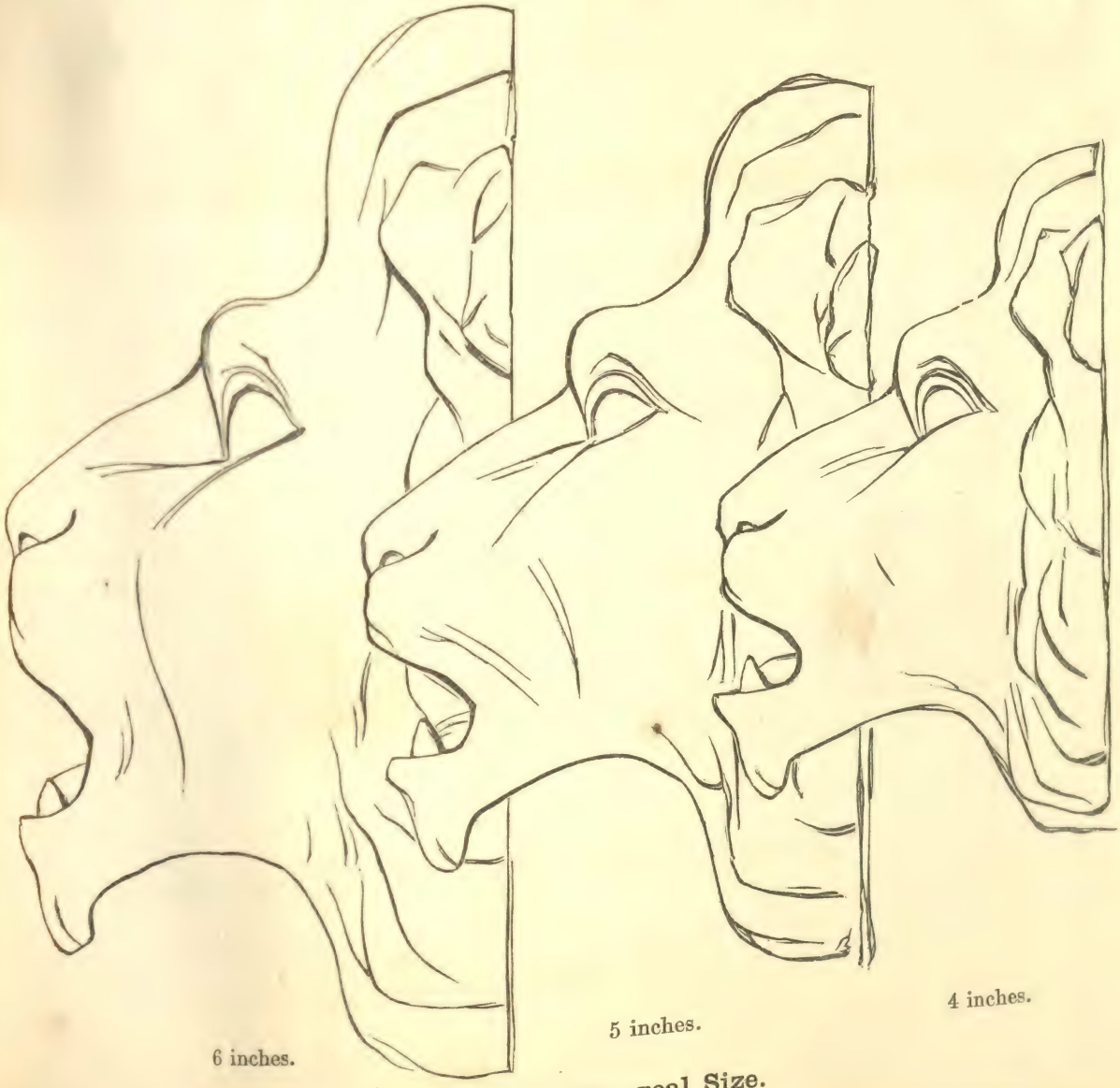
ORNAMENTAL GUTTER CONNECTIONS.

It is sometimes desirable to have Lion Heads or other ornaments on the front of the Gutter cornice, and for this purpose we refer to the following series of patterns, each of which we make three sizes of, viz.:—4, 5, and 6 inches, they can be attached to any pattern of our Gutters, and in such cases, the distance between each ornament should always be specified by the architect, in order that they may correspond with the design of the building.

No. 1 LION'S HEAD.

4, 5, and 6 inches.

This illustrates the No. 1 Lion Head attached to a No. 40 Gutter, but it can be equally well attached to any other suitable pattern.



4 inches.

5 inches.

6 inches.

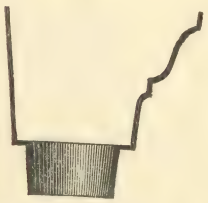
Outline Drawings—real Size.

MACFARLANE'S

ORNAMENTAL GUTTER CONNECTIONS.

We cast Drops on any part of the Gutter *to order*,—either on the bottom, back, or corner, as shown in the following Sections. *In ordering Gutters the size of down pipe should always be stated.*

DROP cast on bottom.



DROP cast on back.

DROP cast on corn

For 2, $2\frac{1}{2}$, 3, $3\frac{1}{2}$, 4, $4\frac{1}{2}$, 5, and 6 inch Pipes.

GUTTER GRATINGS.

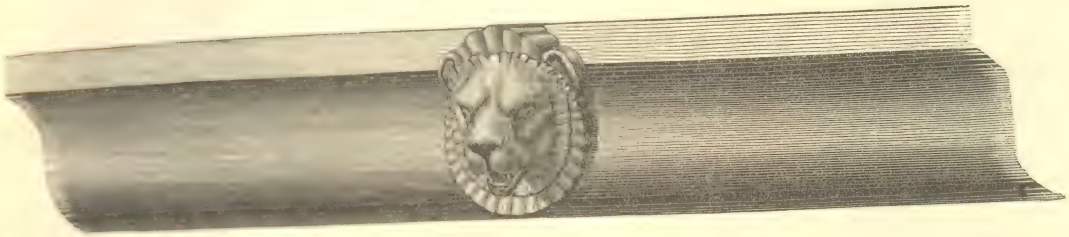
This essential requisite should be placed over every discharge Drop, for the purpose of preventing the down pipe getting choked. The accompanying *real size Sections* show the outside measurement of the various sizes we make. The mode of attaching them to the Gutter is, by firmly embedding the lower end (which is slightly tapered) into the Drop pipe of the Gutter.

2, $2\frac{1}{4}$, $2\frac{1}{2}$, $2\frac{3}{4}$, 3, $3\frac{1}{4}$, $3\frac{1}{2}$, $3\frac{3}{4}$, 4, $4\frac{1}{4}$, $4\frac{1}{2}$, $4\frac{3}{4}$, 5, $5\frac{1}{4}$, $5\frac{1}{2}$, $5\frac{3}{4}$, 6 inches.

Scale, 2 inches,—1 foot.

ORNAMENTAL GUTTER CONNECTIONS.

No. 2 PANTHER'S HEAD.

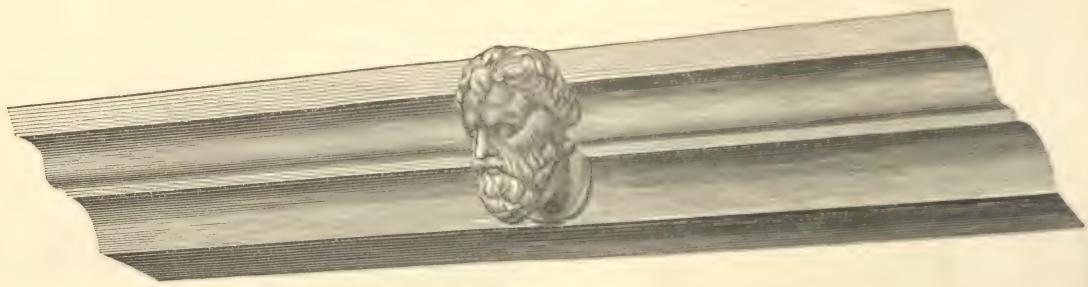


This illustrates the No. 2 PANTHER HEAD attached to a No. 23 Gutter, but it can be equally well attached to any other suitable pattern.

Outline Drawings—real Size.

ORNAMENTAL GUTTER CONNECTIONS.

No. 3 MAN'S HEAD.



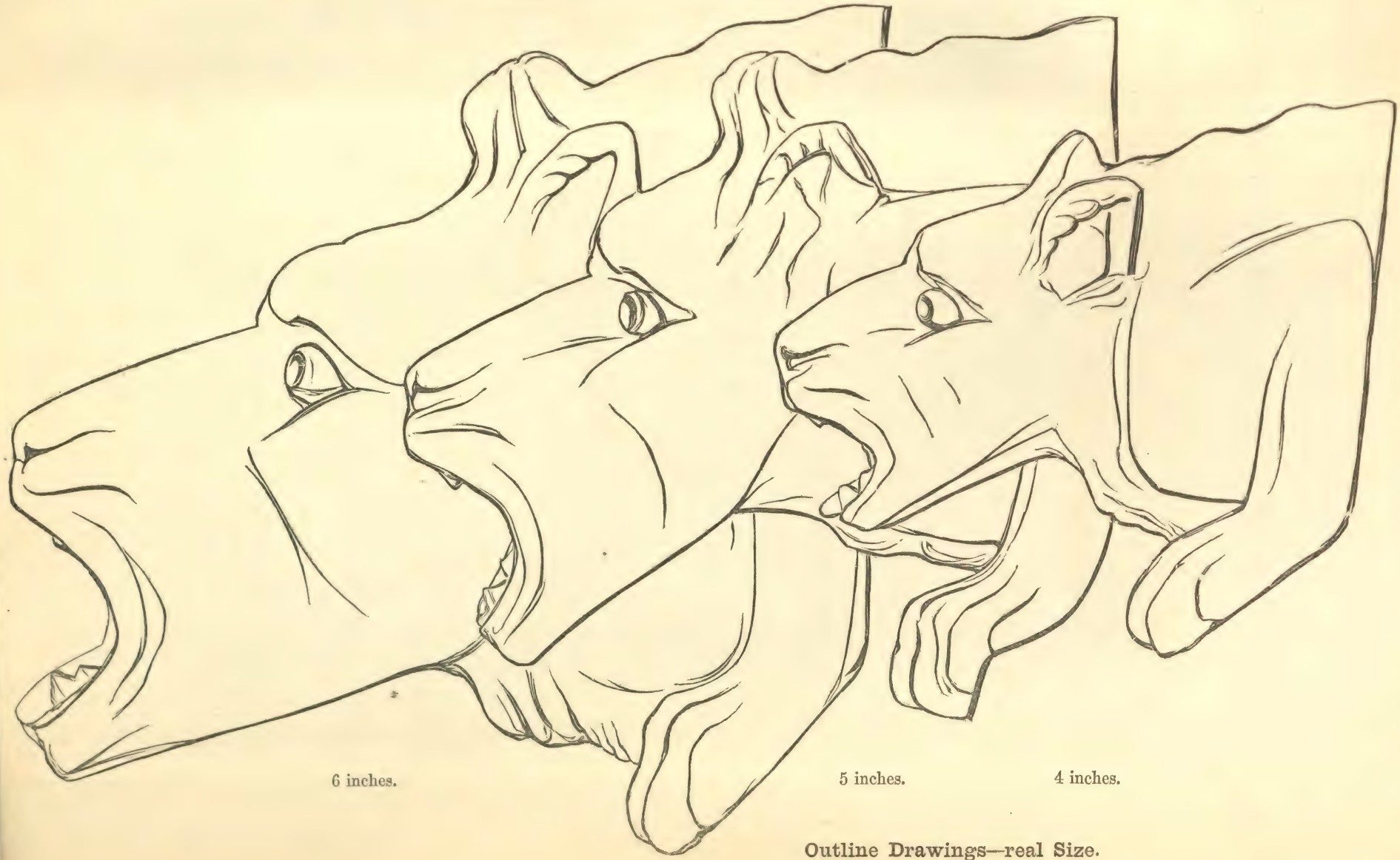
4, 5, and 6 inches.

This illustrates the No. 3 MAN'S HEAD attached to a No. 10 Gutter, but it can be equally well attached to any other suitable pattern.

6 inches. 5 inches. 4 inches.

Outline Drawings—real Size.

This illustrates the No. 4 GARGOYLE attached to a *No. 42* Gutter, but it can be equally well attached to any other suitable pattern.



6 inches. 5 inches. 4 inches.

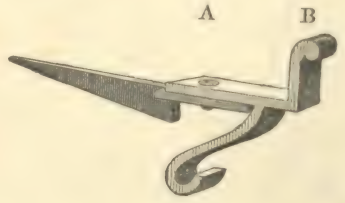
Outline Drawings—real Size.

ORNAMENTAL GUTTER CONNECTIONS.

GUTTER BRACKETS.

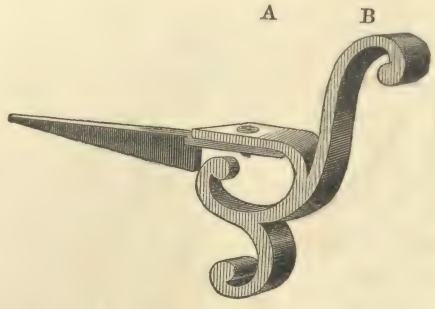
With the view of providing proper arrangements for fixing cast iron Gutters to the building, we have introduced various styles of ornamental Brackets, the adoption of one or other of which will be found a great improvement on the old method.

No. 3 GUTTER BRACKET.



We make the following sizes:—3, 3½, 4, 4½, 5, 5½, and 6 inches, measuring between A. and B. This pattern of Bracket is only suitable for No. 4, 5, 6, and 14 Gutters.

No. 4 GUTTER BRACKET.



We make the following sizes:—3, 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½, and 8 inches, measuring between A. and B. This pattern of Bracket is suitable for any pattern of our Gutters.

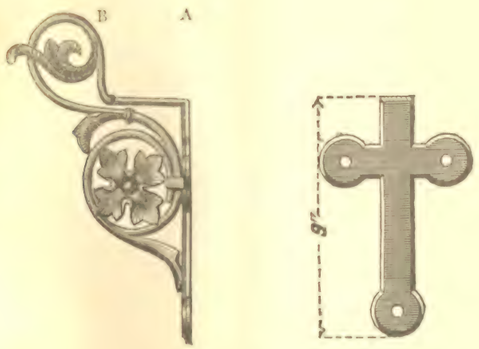
In ordering Gutter Brackets, be particular in stating the No. and size of Gutter the Bracket is to be attached to.

Instructions for fitting up No. 3 and 4 Gutter Brackets. The spike, or holdfast portion, being made of wrought iron, is first driven into the wall—which may be either stone, brick, or wood, the cast iron portion of the Bracket is then attached to it by the screw. The spike, or holdfast, can also be made for batting, or to suit any peculiar conformation of wall to order.

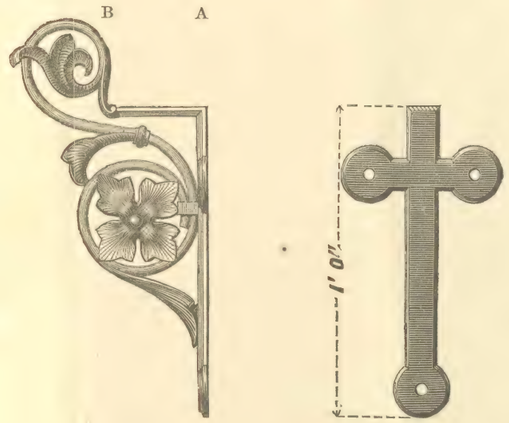
Scale, 2 inch,—1 foot.

MACFARLANE'S ORNAMENTAL GUTTER BRACKETS.

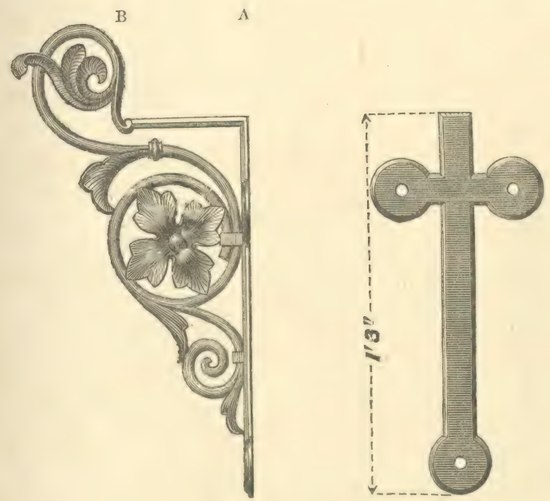
No. 5,—9 inches.



No. 5,—12 inches.

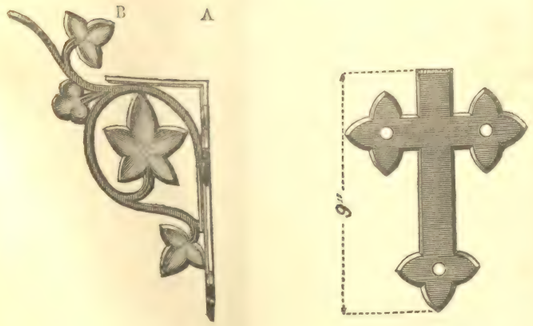


No. 5,—15 inches.

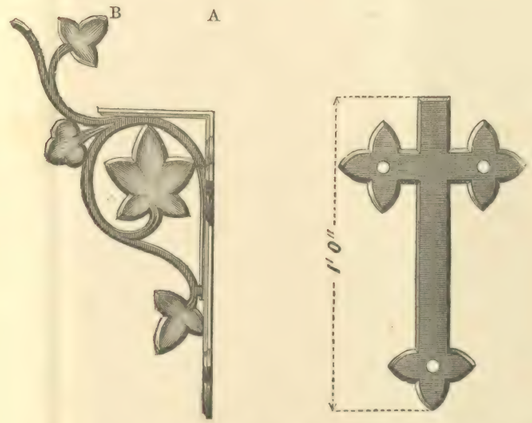


We make the above three sizes of No. 5 Brackets, and each of these three sizes to measure 3, 3¼, 3½, 3¾, 4, 4¼, 4½, 4¾, 5, 5¼, 5½, 5¾, 6, 6¼, 6½, 6¾, 7, 7¼, 7½, 7¾, and 8 inches, between A and B, thus suiting every pattern and size of Gutter in our Catalogue.

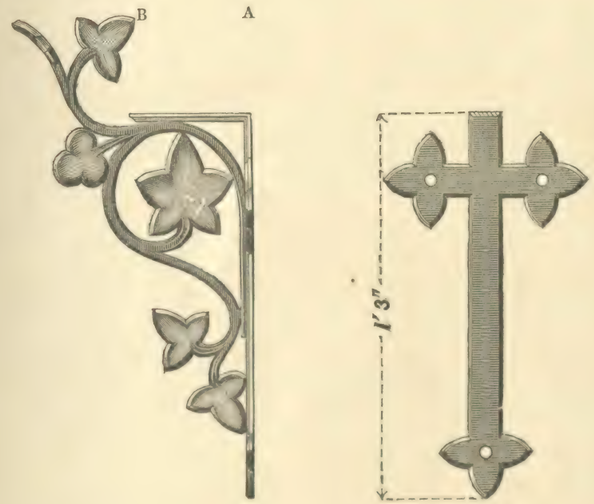
No. 6,—9 inches.



No. 6,—12 inches.



No. 6,—15 inches.



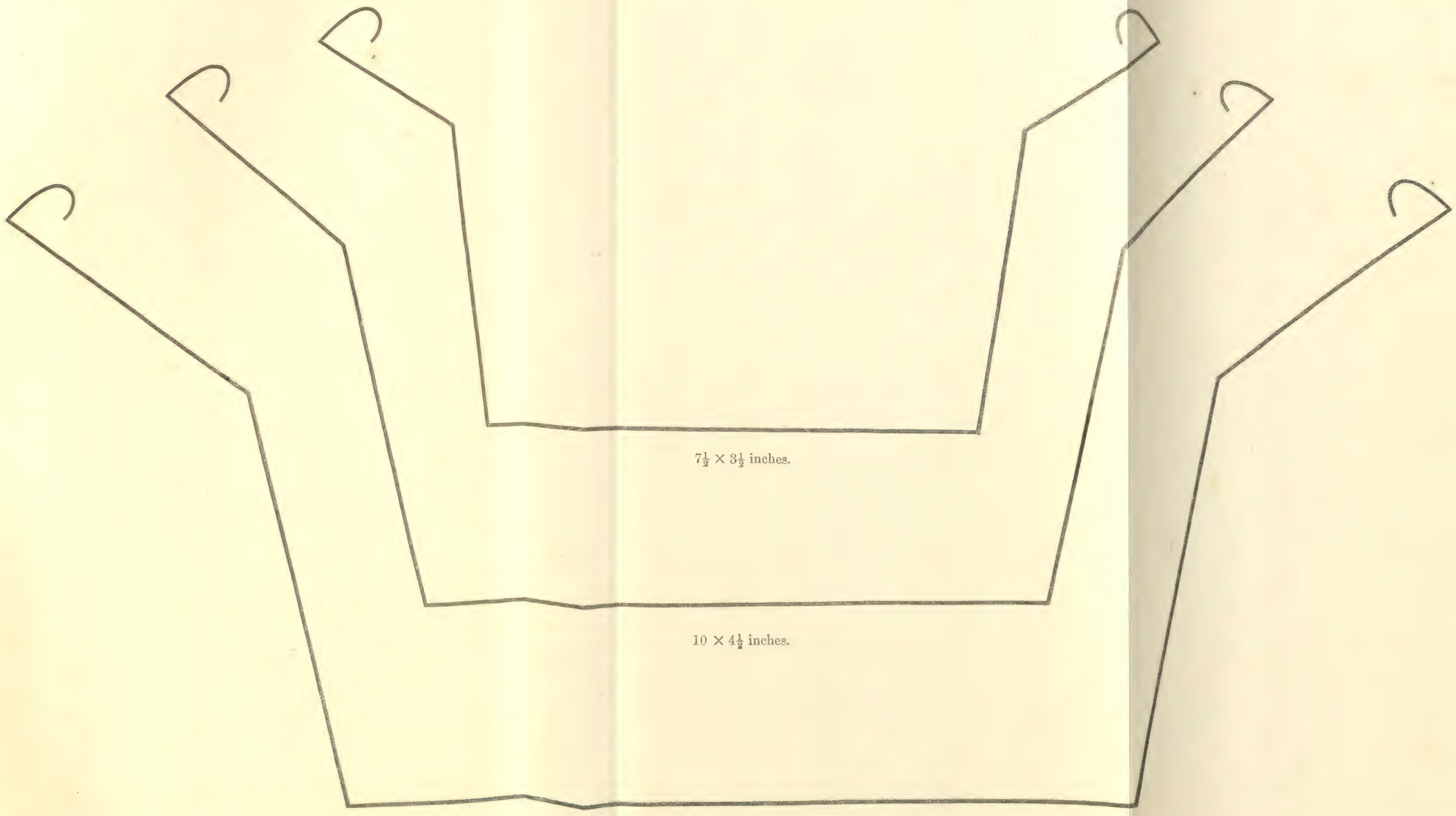
We make the above three sizes of No. 6 Brackets, and each of these three sizes to measure 3, 3¼, 3½, 3¾, 4, 4¼, 4½, 4¾, 5, 5¼, 5½, 5¾, 6, 6¼, 6½, 6¾, 7, 7¼, 7½, 7¾, and 8 inches, between A and B, thus suiting every pattern and size of Gutter in our Catalogue.

Scale, 2 inch—1 foot.

CENTRE GUTTERS.

No. 19.

$7\frac{1}{2} \times 3\frac{1}{2}$, $10 \times 4\frac{1}{2}$, and $13 \times 5\frac{1}{2}$ inches.



$7\frac{1}{2} \times 3\frac{1}{2}$ inches.

$10 \times 4\frac{1}{2}$ inches.

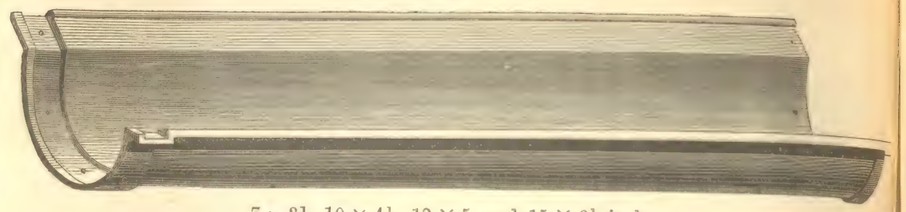
$13 \times 5\frac{1}{2}$ inches.

Sections real Size,—outside measure.

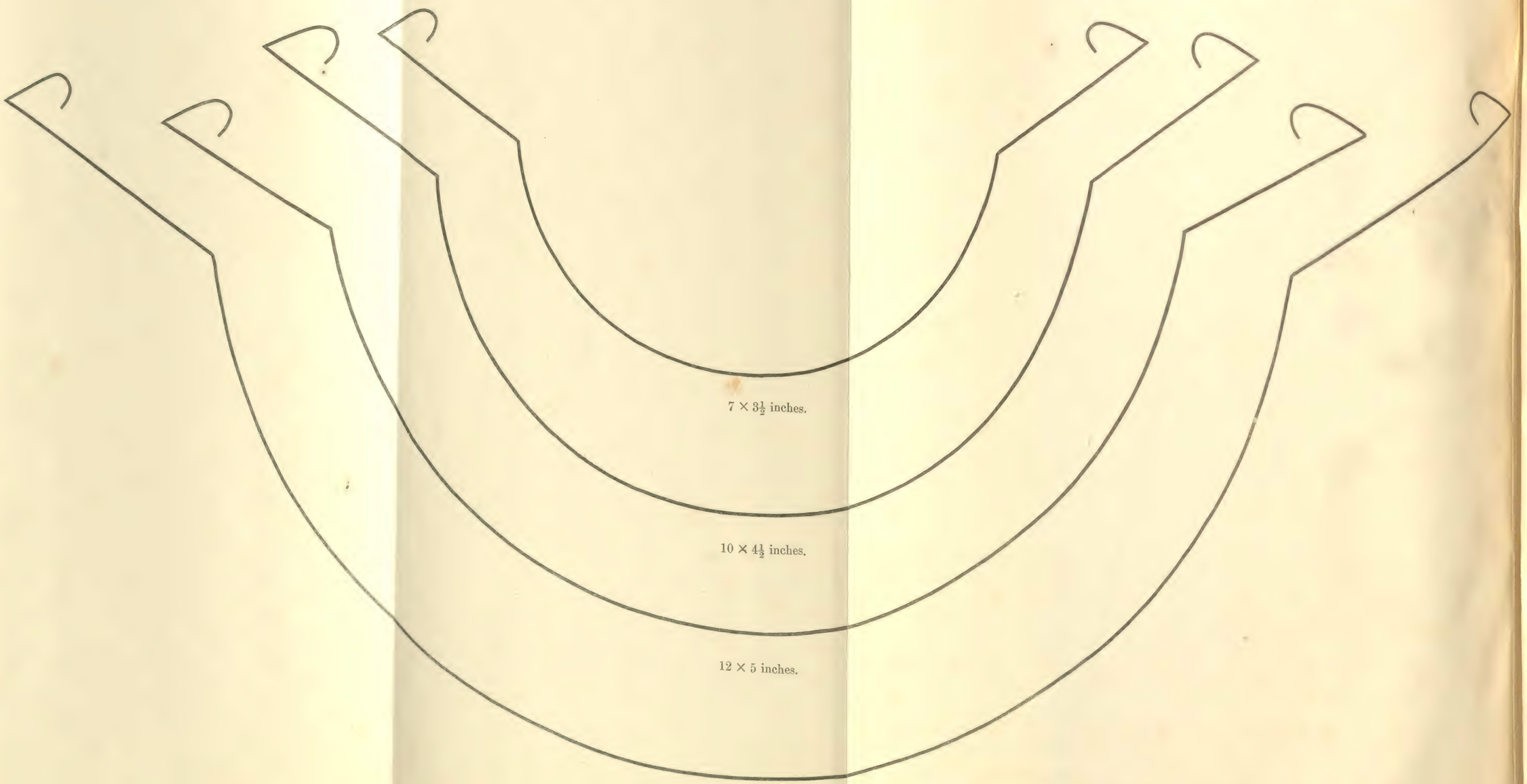
MACFARLANE'S PATENT.

CENTRE GUTTERS.

No. 36.



$7 \times 3\frac{1}{2}$, $10 \times 4\frac{1}{2}$, 12×5, and $15 \times 6\frac{1}{2}$ inches.



$7 \times 3\frac{1}{2}$ inches.

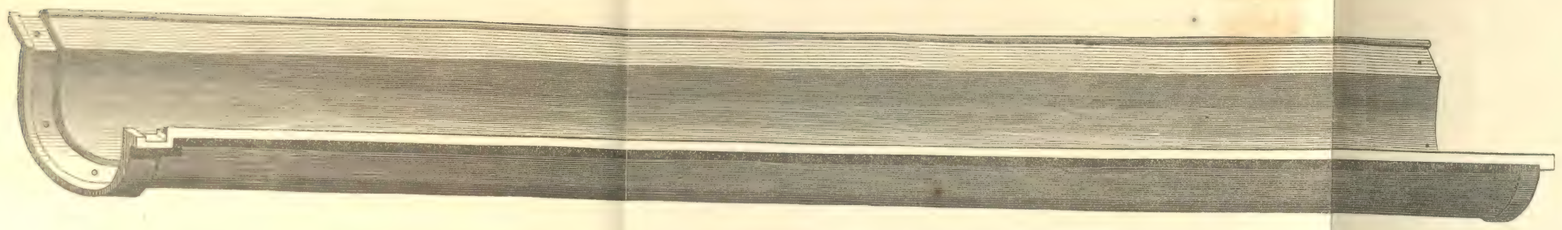
$10 \times 4\frac{1}{2}$ inches.

12×5 inches.

$15 \times 6\frac{1}{2}$ inches.

Sections real Size,—outside measure.

No. 20 Tapered Centre Gutter, with Waterfall of 3 inches on every 200 feet.

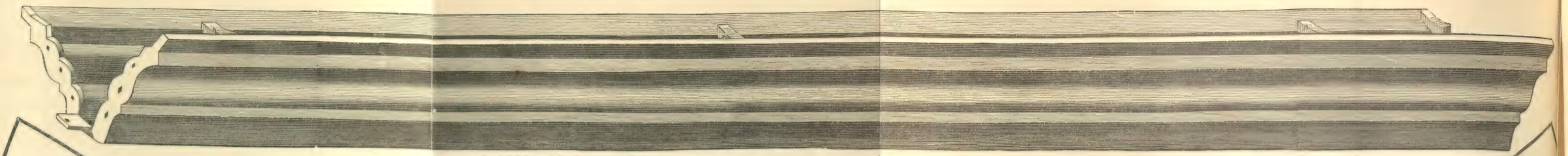


15 inches wide × 9 inches deep, tapered to $6\frac{1}{2}$ inches at shallow end of each 200 feet.

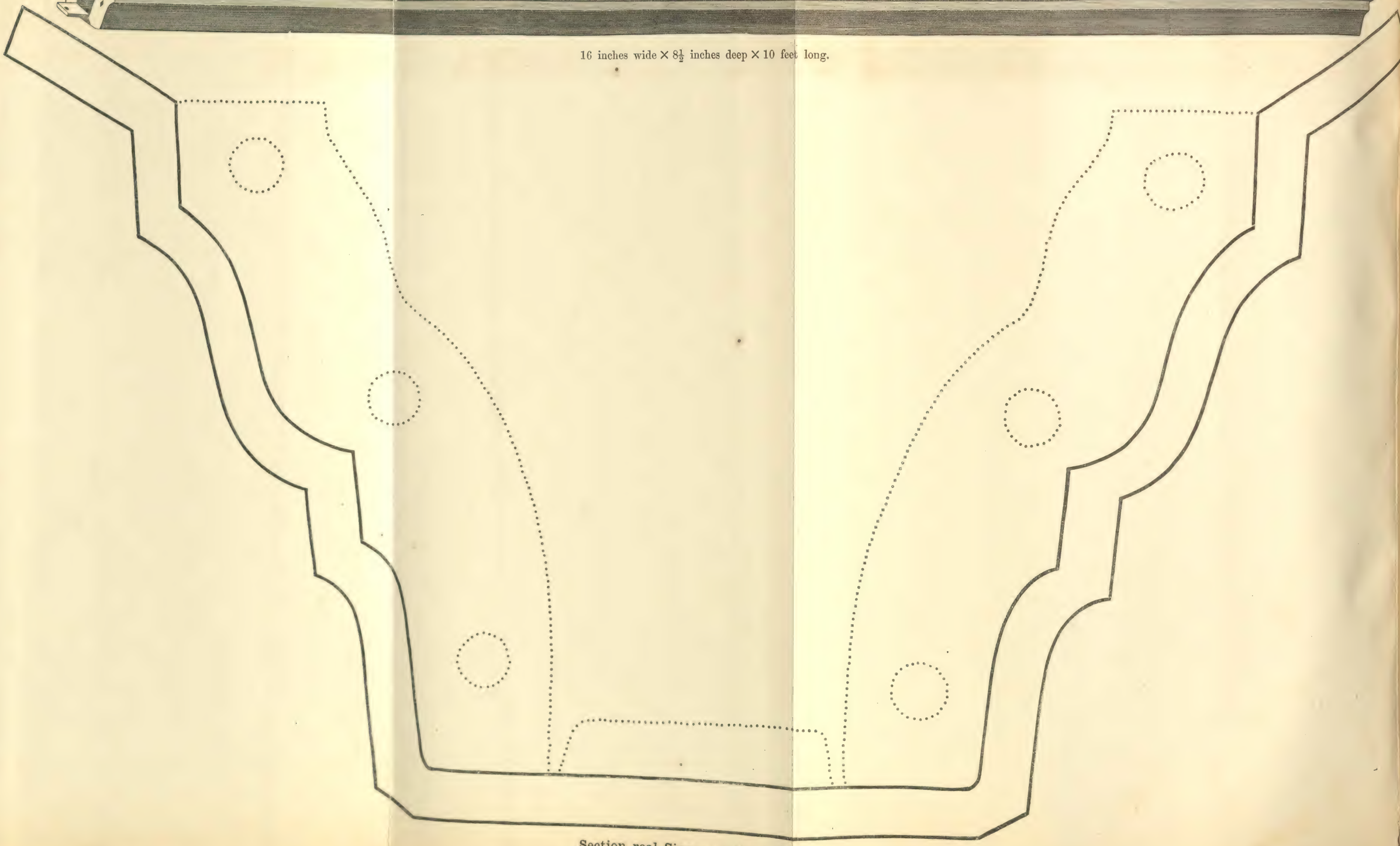
Section real Size,—outside measure.

MACFARLANE'S PATENT.

No. 21 Ornamental Centre Beam Gutter, for Iron Roofs, &c.



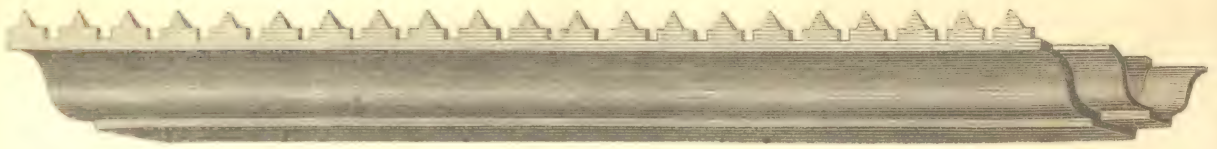
16 inches wide × 8½ inches deep × 10 feet long.



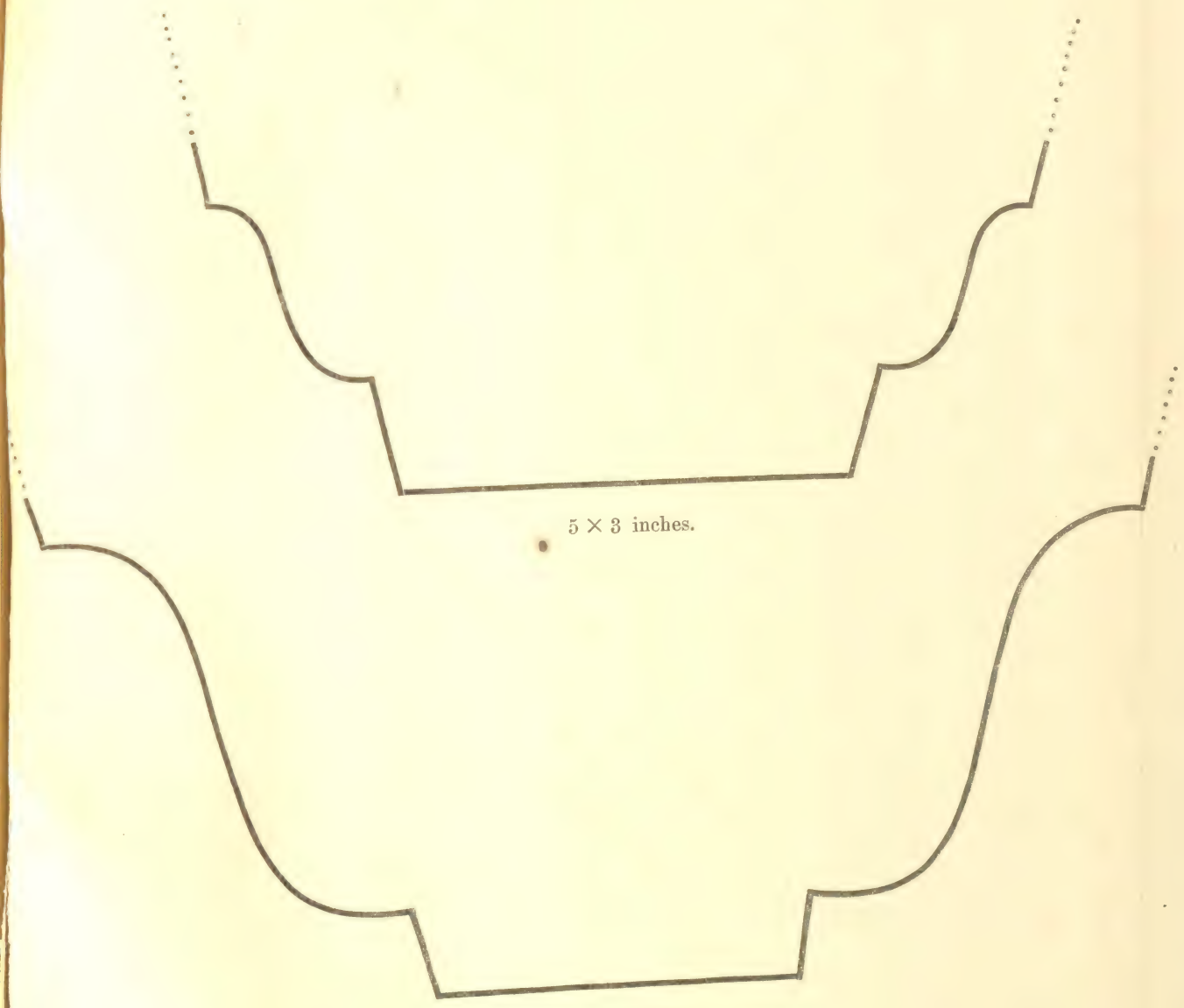
Section real Size,—outside measure.

MACFARLANE'S PATENT.

No. 27 CENTRE GUTTER for Iron Buildings, &c.



5×3 and $6 \times 3\frac{1}{2}$ inches.



5×3 inches.

$6 \times 3\frac{1}{2}$ inches.

Sections real Size,—outside measure.

MACFARLANE'S PATENT.

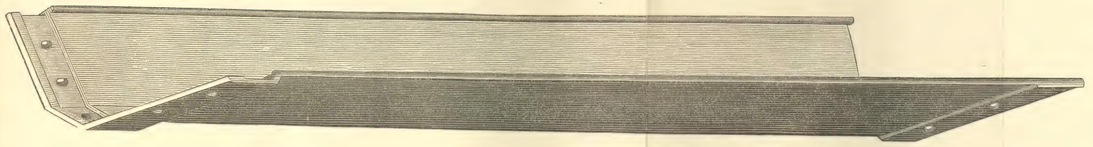
No. 31 CENTRE GUTTER.

9 × 6 inches, with 3 inch bearing Flanges on each side for joists.

Section real Size,—outside measure.

MACFARLANE'S PATENT.

No. 32 Tapered Centre Gutter, with Waterfall of 3 inches on every 200 feet, **for Factories, Sheds, &c.**



24 inches wide × 6 inches deep, tapered to 3 inches at shallow end of each 200 feet.

Section real Size,—outside measure.

MACFARLANE'S PATENT.

No. 35 CENTRE GUTTERS.

$11\frac{1}{2} \times 3\frac{1}{2}$, 15×5, 19×5, and 24×6 inches.

$11\frac{1}{2} \times 3\frac{1}{2}$ inches.

15×5 inches.

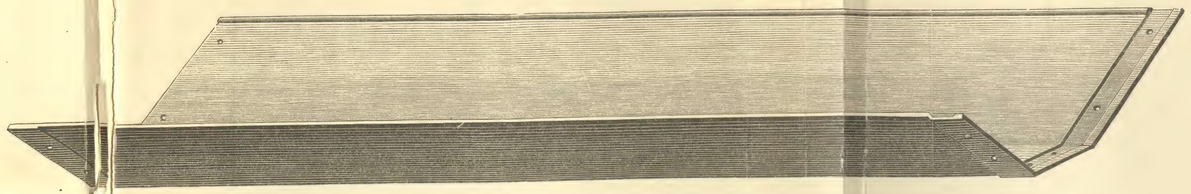
19×5 inches.

24×6 inches.

Sections real Size,—outside measure.

MACFARLANE'S PATENT.

No. 39 CENTRE GUTTERS.

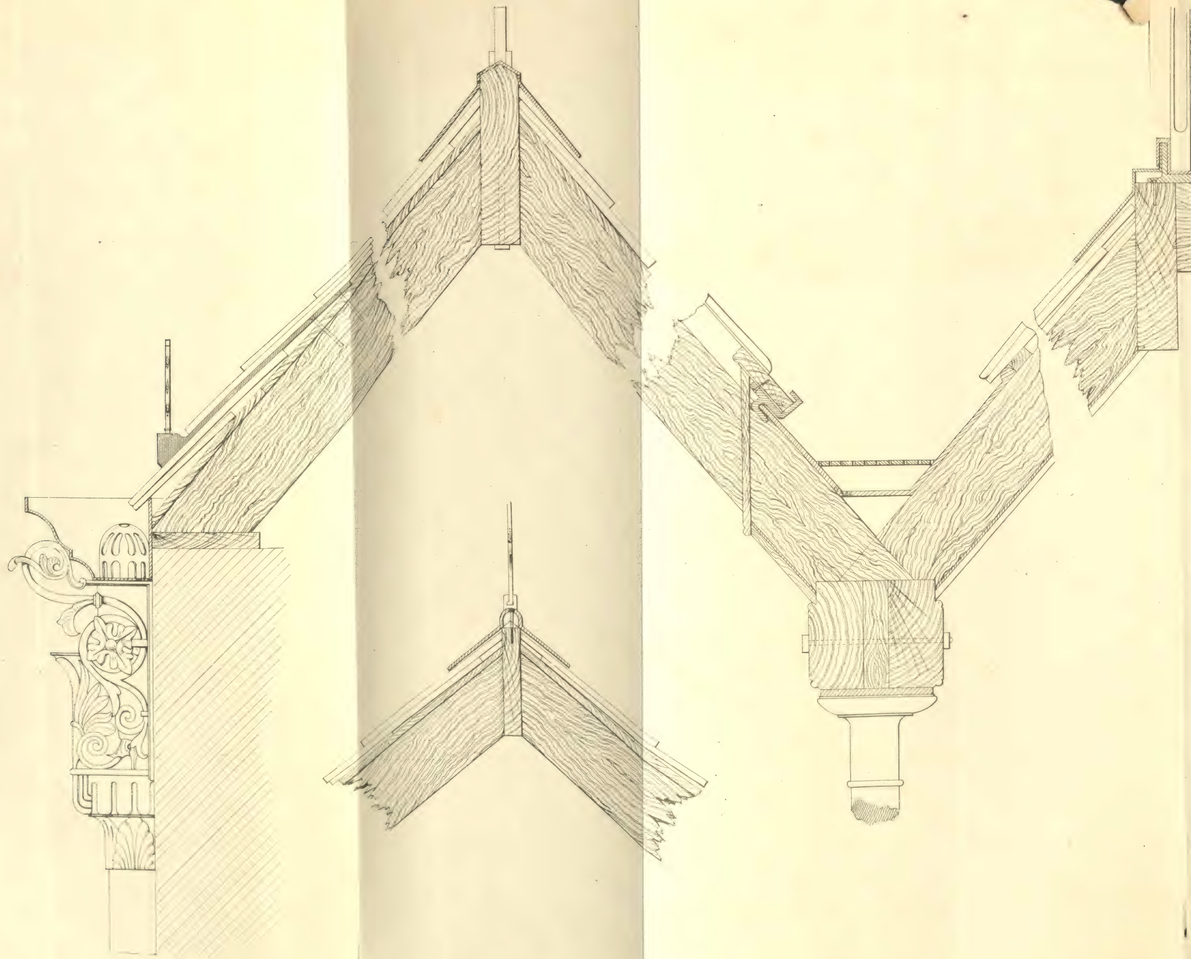


19 × 6 and 24 × 6 inches.

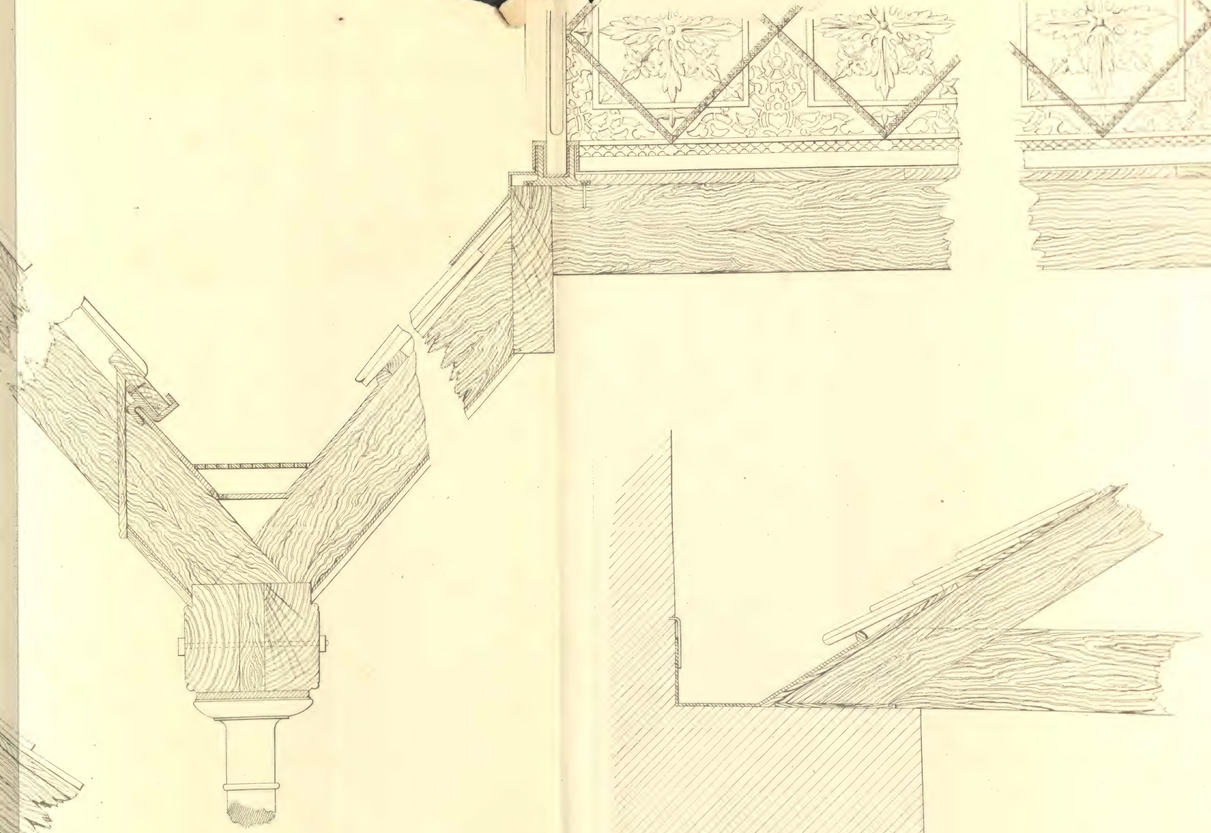
19 × 6 inches.

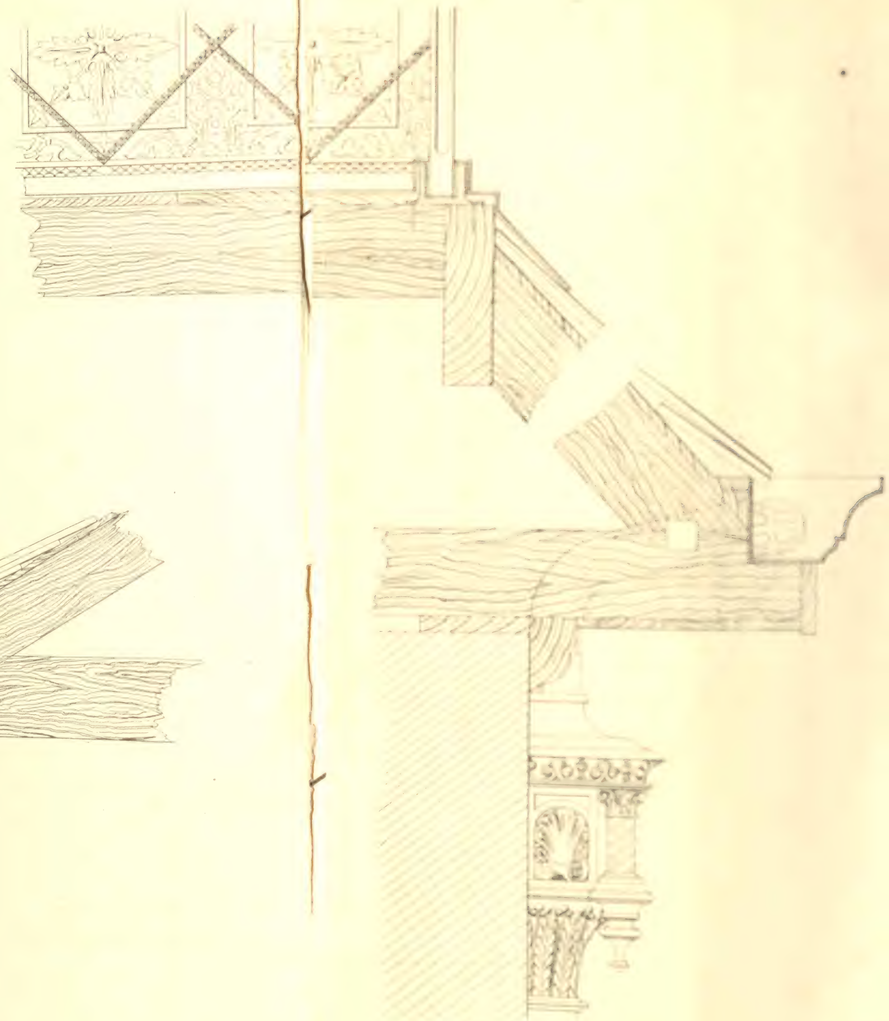
24 × 6 inches.

Sections real Size,—outside measure.



Scale 1½ inch—1 foot.

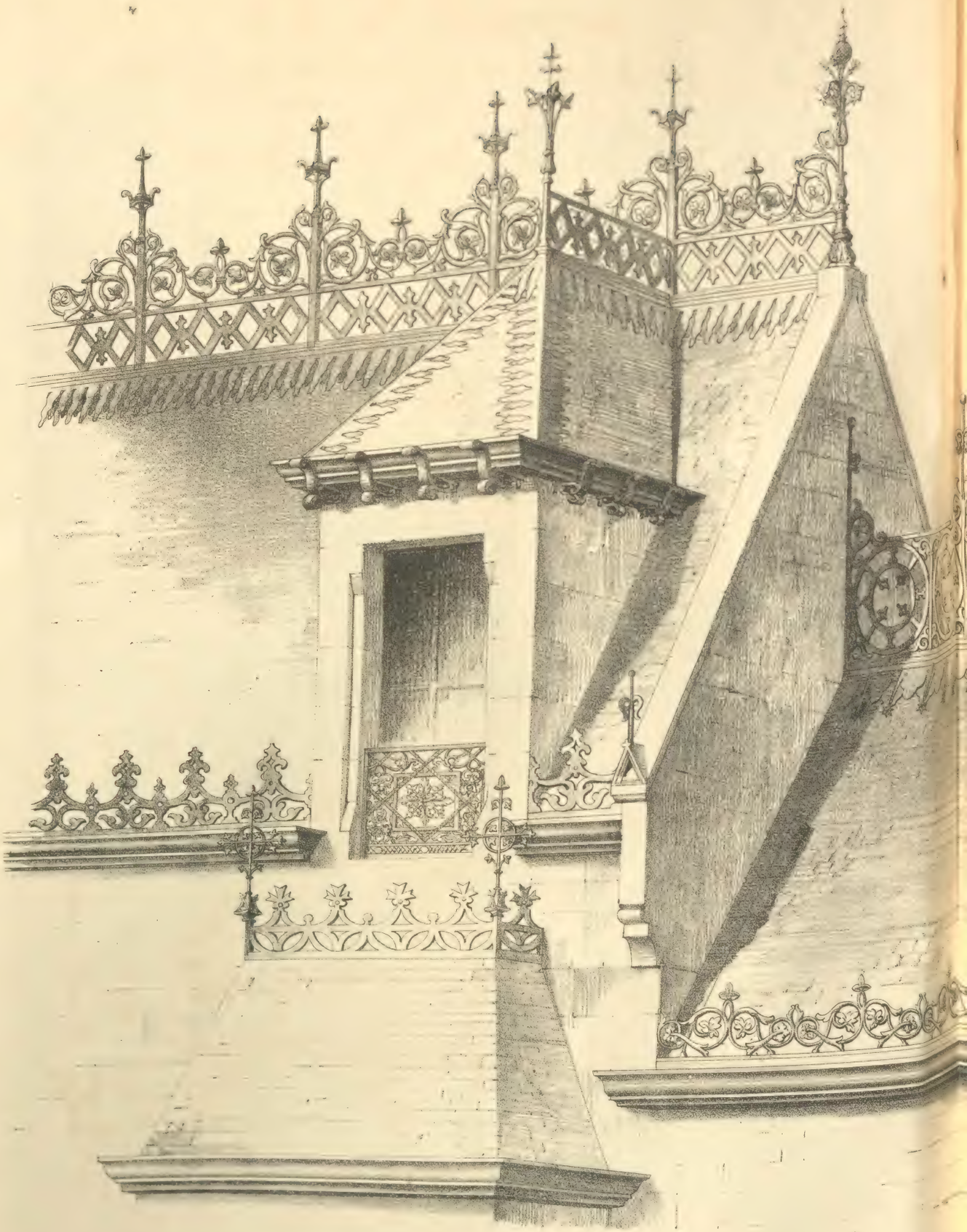




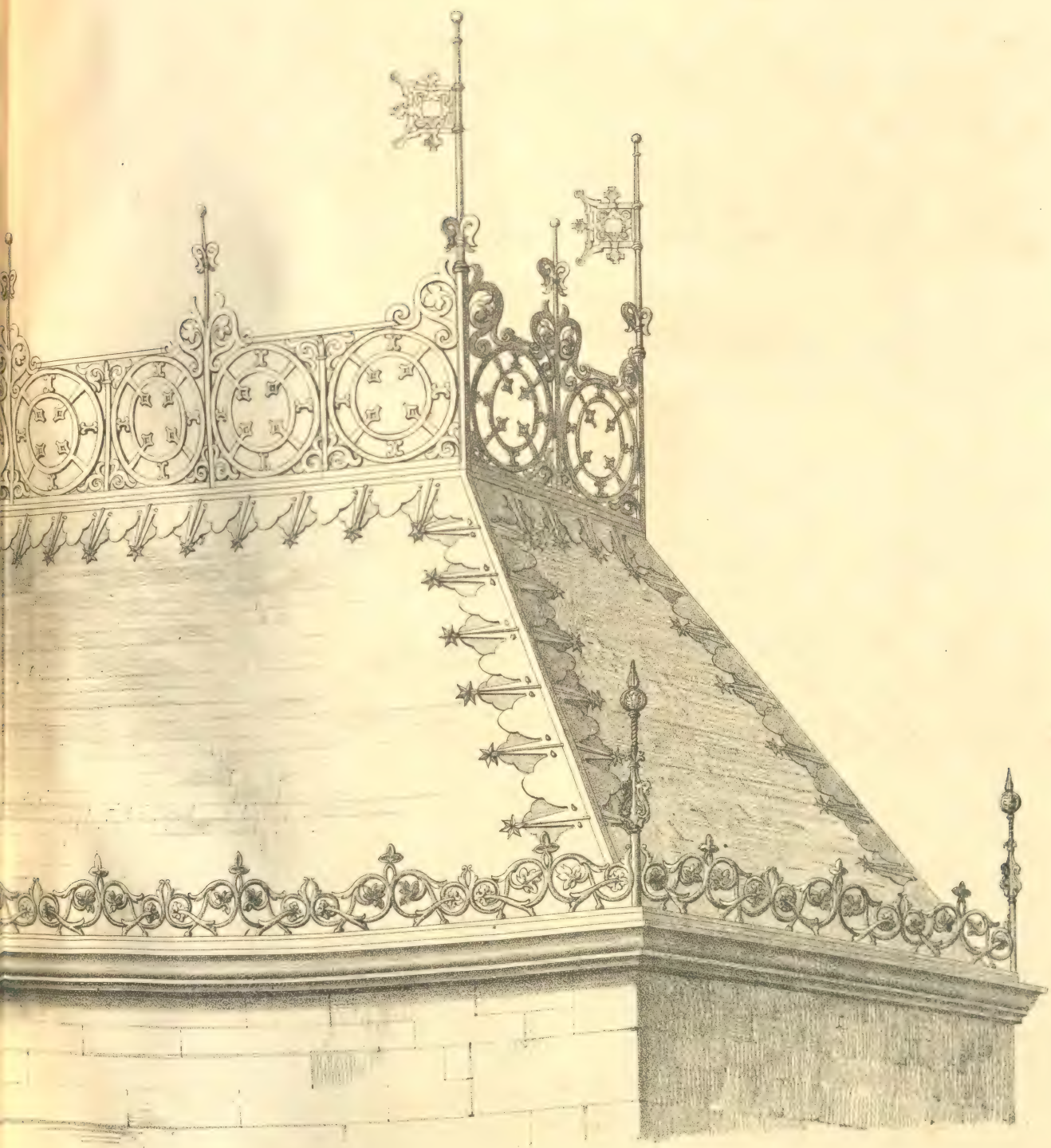
MACFARLANE'S EXAMPLES, *showing cross sections of Gutters, Cresting, &c., in combination with the Building.*

PART III.

ROOF AND WALL CRESTING, &c.



MACFARLANE'S EXAMPLES, *showing various*

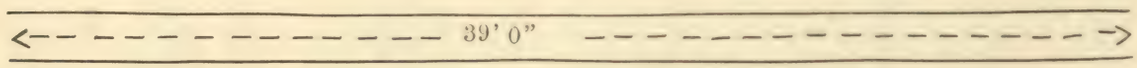


rdes of applying Ridge Plates, Cresting, &c., to Buildings.

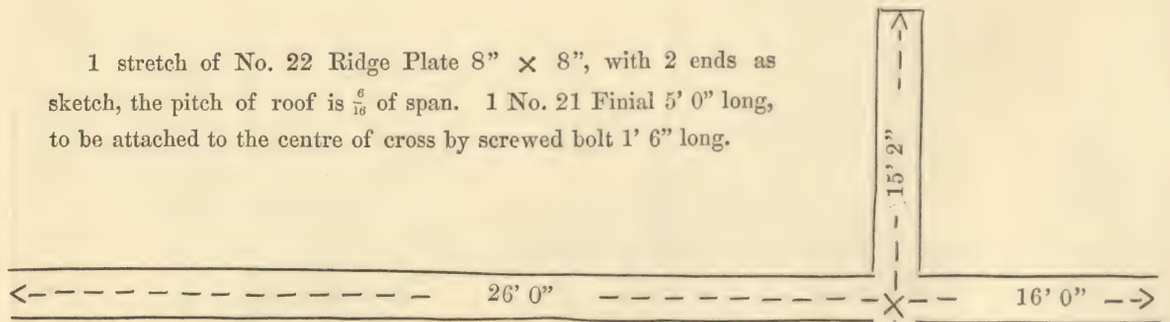
DIRECTIONS FOR ORDERING.

The following examples show the simplest method of ordering Ridge Plates, Crestings, &c., when they are wanted cut to particular measurements.

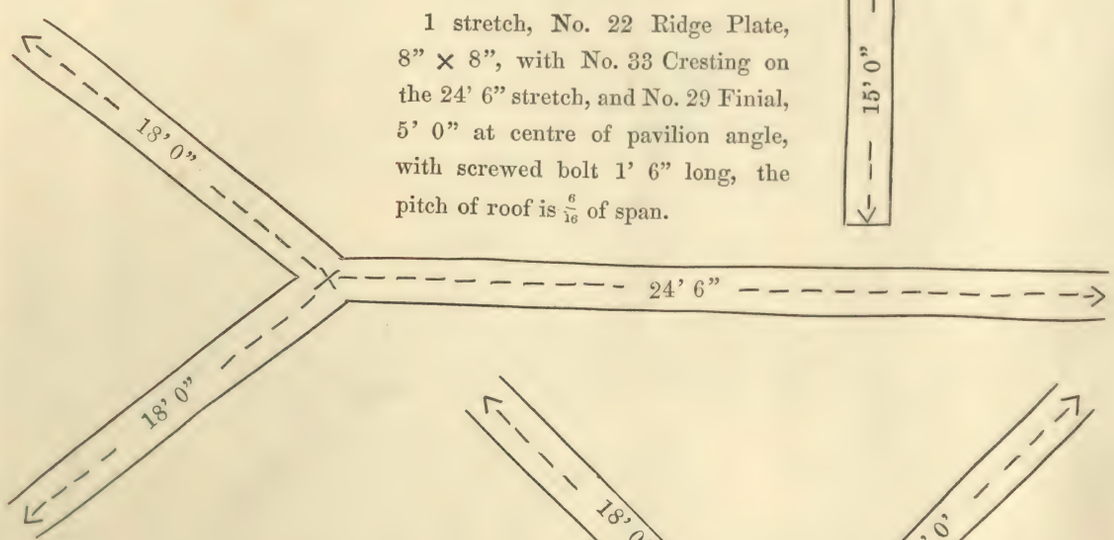
1 stretch of No. 20 Ridge Plate, 6" × 6" as sketch, the pitch of roof is $\frac{6}{16}$ of span.



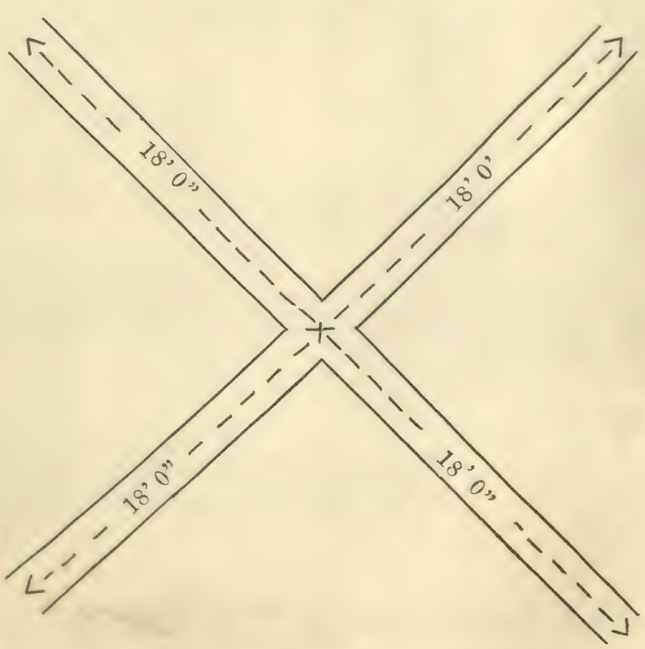
1 stretch of No. 22 Ridge Plate 8" × 8", with 2 ends as sketch, the pitch of roof is $\frac{6}{16}$ of span. 1 No. 21 Finial 5' 0" long, to be attached to the centre of cross by screwed bolt 1' 6" long.



1 stretch, No. 22 Ridge Plate, 8" × 8", with No. 33 Cresting on the 24' 6" stretch, and No. 29 Finial, 5' 0" at centre of pavilion angle, with screwed bolt 1' 6" long, the pitch of roof is $\frac{6}{16}$ of span.



1 stretch of No. 22 Ridge Plate 8" × 8", as sketch, the pitch of roof is $\frac{6}{16}$ of span. 1 No. 28 Finial 7' 0" long, to be attached to the apex by screwed bolt 1' 6" long.



RIDGE-PLATES.

RIDGE-PLATES.—Comparatively little attention has been hitherto given to this very important detail of a building, and consequently it is no unusual thing to see our finest buildings finished, in this respect, in a style no way superior to the very commonest class of erections. We hope, therefore, the complete and elegant designs introduced by us will inaugurate a new feeling in the treatment of roofs. The manner in which our Ridge-plates overlop each other at the joints, ensures a perfectly water tight junction, whilst the strength and durability of the material they are made of, offer great advantages for their universal adoption.

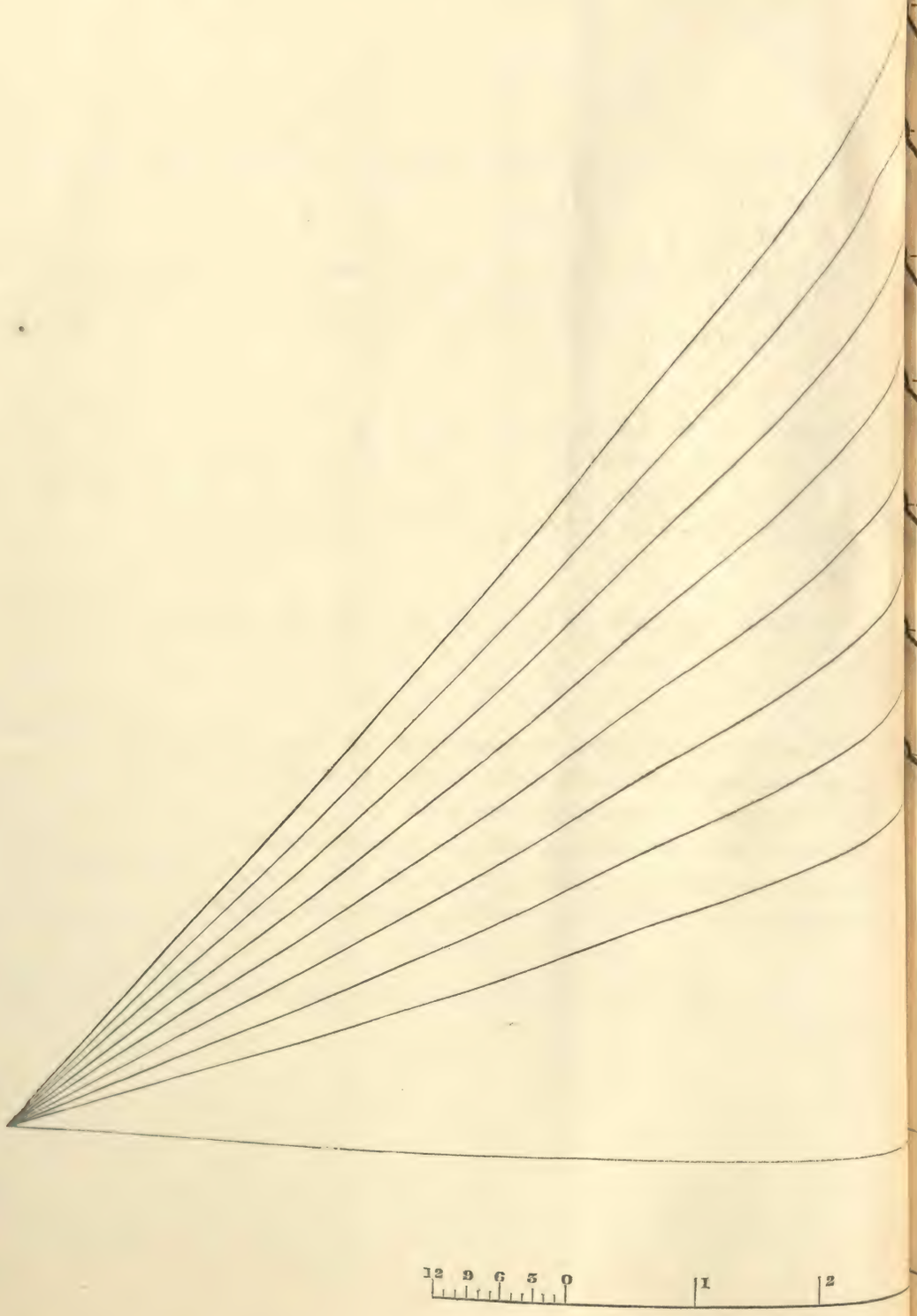
In order that the various details may be clearly laid down in the architect's plans, we give real size sections; and when sections are not given, each object is drawn to a scale, and the scale stated, or the size itself is stated. We have also given several illustrative sheets of drawings, showing various modes of applying our Ridge-plates and their connections to the adjoining work.

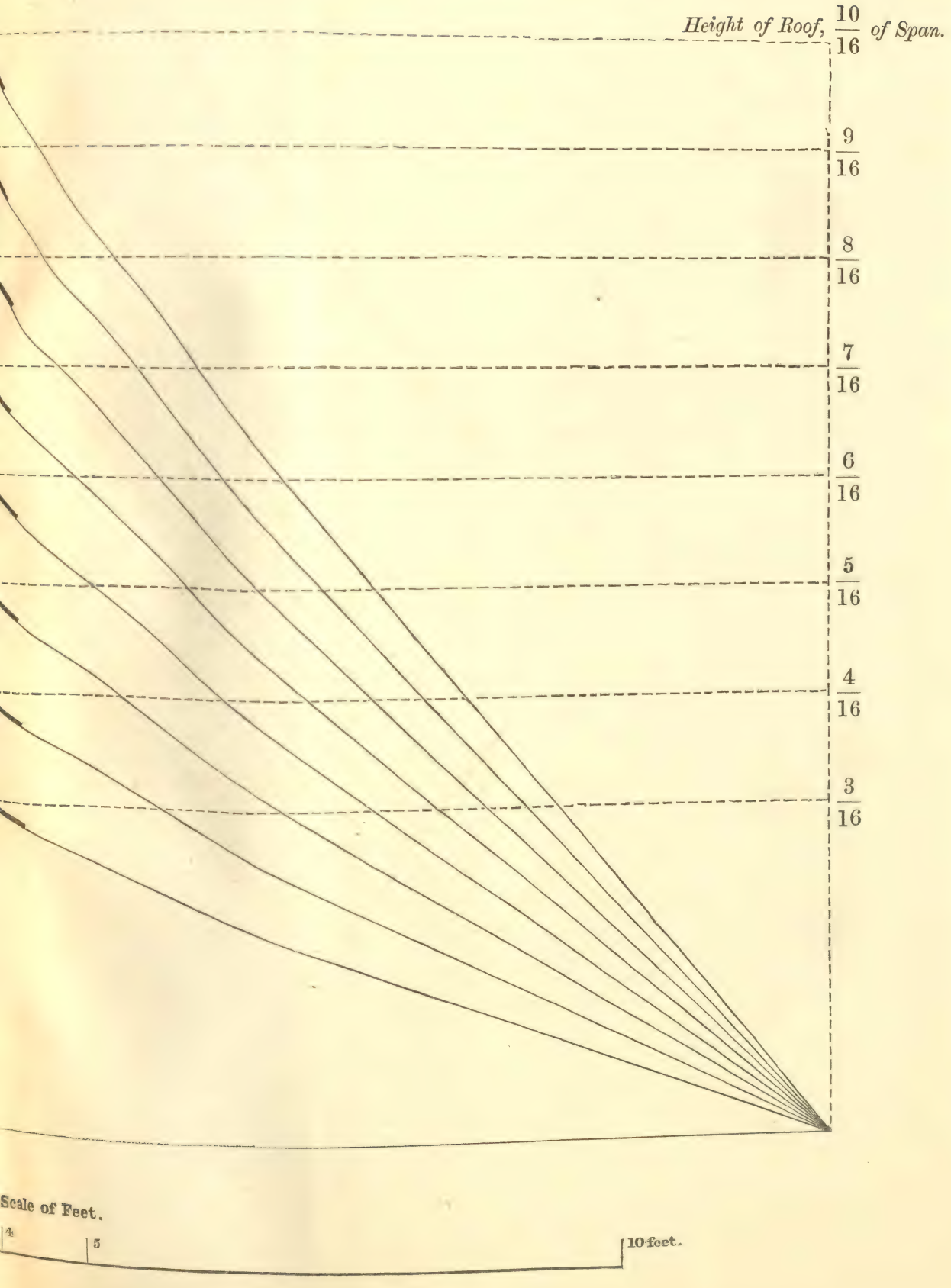
Architect's Schedules should distinctly specify the description of Ridge-plate, by giving the No. and size.

In ordering Ridge-plates, our customers will please state the No., size, and pitch of roof they are to fit; and they may either order the required number of 6 feet lengths, along with the necessary quantity and description of connections and cut them to suit the required buildings themselves; or by giving us a plan of the building, with the exact measurements, we will furnish them all properly marked and ready for fitting up. The diagram at page 106, represents the eight pitches of roof our Ridge-plates are made for—*intermediate, or any other pitches, made to order.*

Our Ridge-plate connections, which we can furnish for every pattern, size, and pitch of Ridge-plate we make.

We can supply any pattern or size of our Ridge-plates to fit the eight pitches of roof shown by the annexed diagram—*intermediate or other pitches made to order.*



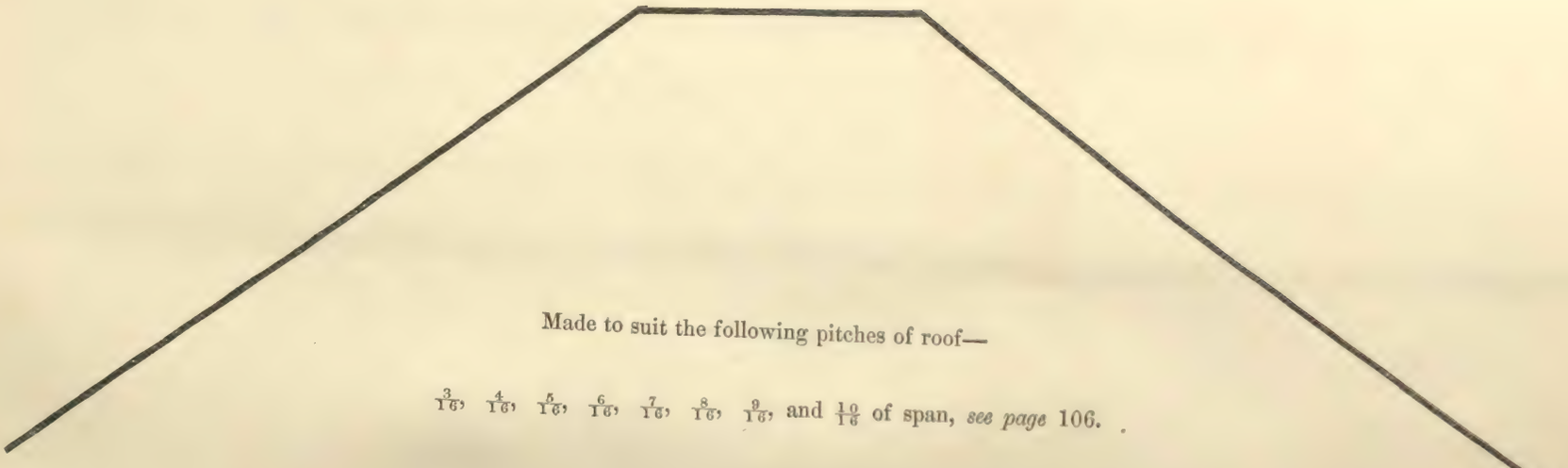

Height of Roof, 10/16 of Span.
9/16
8/16
7/16
6/16
5/16
4/16
3/16
Scale of Feet.
4
5
10 feet.

MACFARLANE'S PATENT.

RIDGE-PLATES.

No. 1.

5 × 5 inches.



Made to suit the following pitches of roof—

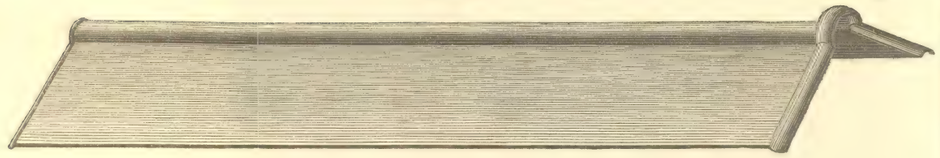
$\frac{3}{16}$, $\frac{4}{16}$, $\frac{5}{16}$, $\frac{6}{16}$, $\frac{7}{16}$, $\frac{8}{16}$, $\frac{9}{16}$, and $\frac{10}{16}$ of span, *see page* 106.

Section real Size—inside measure.

MACFARLANE'S PATENT.

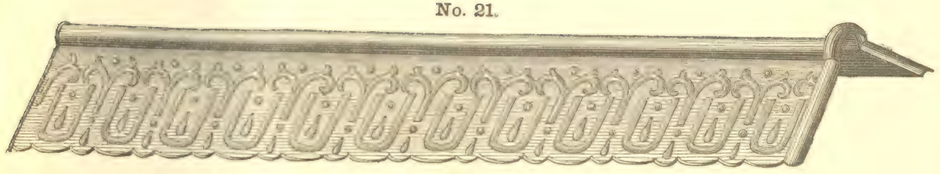
RIDGE-PLATES.

No. 20.



6 × 6 and 8 × 8 inches.

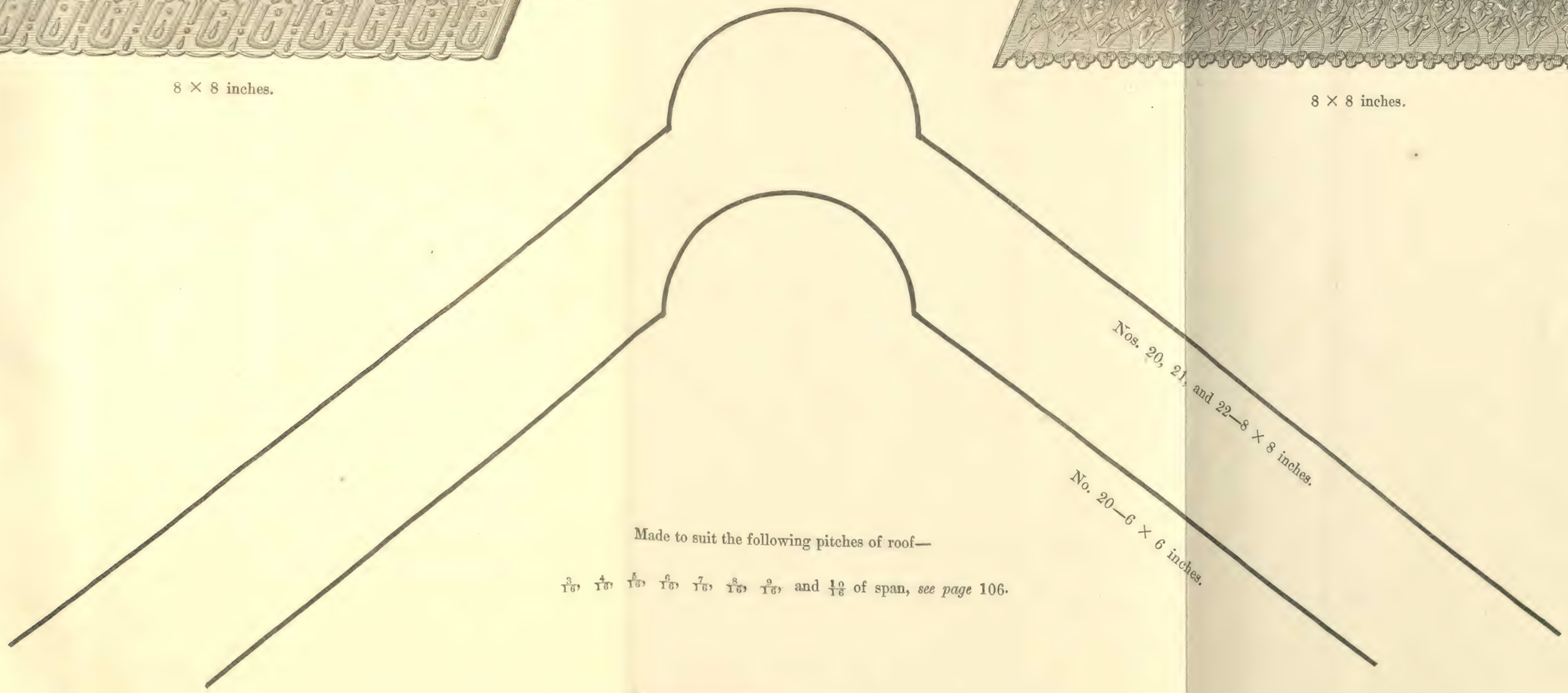
No. 21.



8 × 8 inches.

No. 22.

8 × 8 inches.



Made to suit the following pitches of roof—

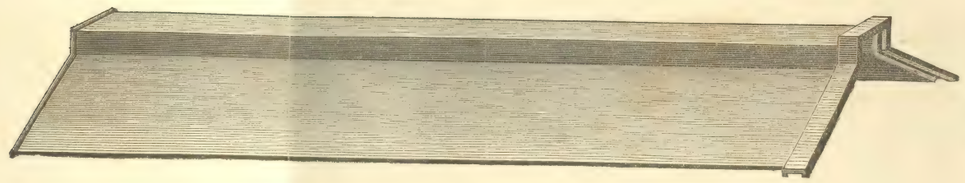
$\frac{3}{16}$, $\frac{4}{16}$, $\frac{5}{16}$, $\frac{6}{16}$, $\frac{7}{16}$, $\frac{8}{16}$, $\frac{9}{16}$, and $\frac{10}{16}$ of span, *see page* 106.

Sections real Size,—inside measure.

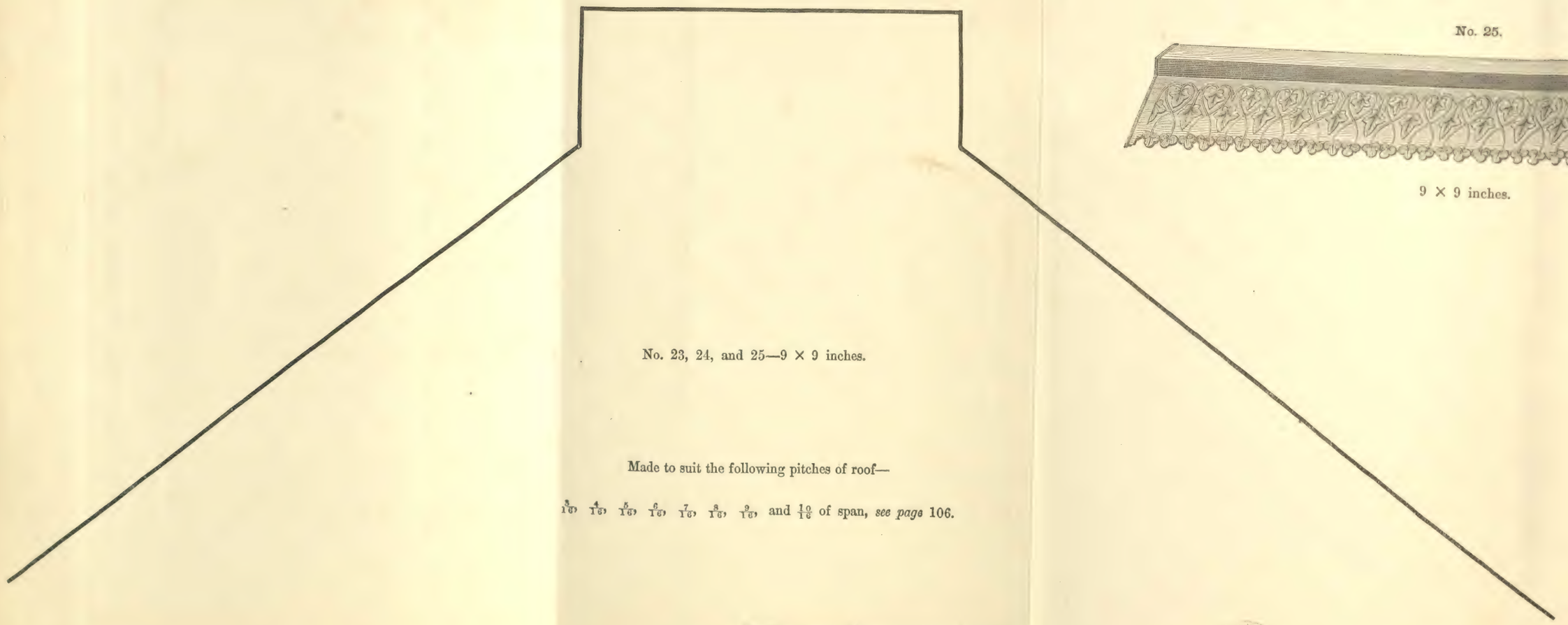
MACFARLANE'S PATENT.

RIDGE-PLATES.

No. 23.



9 × 9 inches.



No. 23, 24, and 25—9 × 9 inches.

Made to suit the following pitches of roof—

$\frac{3}{16}$, $\frac{4}{16}$, $\frac{5}{16}$, $\frac{6}{16}$, $\frac{7}{16}$, $\frac{8}{16}$, $\frac{9}{16}$, and $\frac{10}{16}$ of span, *see page* 106.

Section real Size,—inside measure.

No. 24.

9 × 9 inches.

No. 25.

9 × 9 inches.

No. 26 Turret CAP.

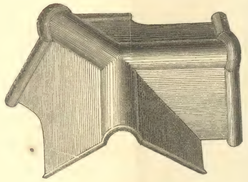
No. 27 Turret CAP.

We can supply these connections for any size or shape of roof, and in connection with any Finial, Banneret, or Weathervane in our Catalogue.

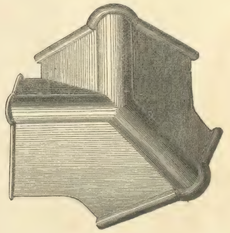
MACFARLANE'S PATENT.

RIDGE PLATE CONNECTIONS.

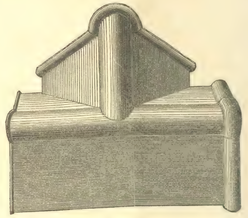
Left Hand ANGLE.



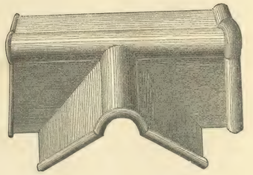
Right Hand ANGLE.



Left Hand T.



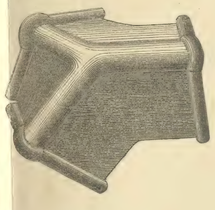
Right Hand T.



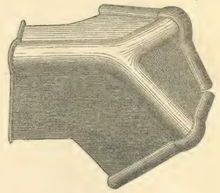
We can supply the above connections for any pattern, size, or pitch of Ridge Plate in our Catalogue.

Scale, 1½ inch—1 foot.

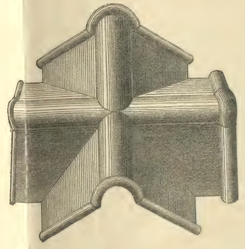
Left Hand Pavilion ANGLE.



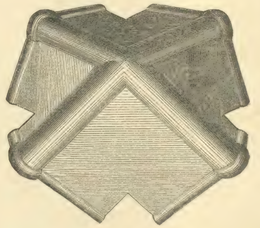
Right Hand Pavilion ANGLE.



CROSS.



Pavilion APEX.



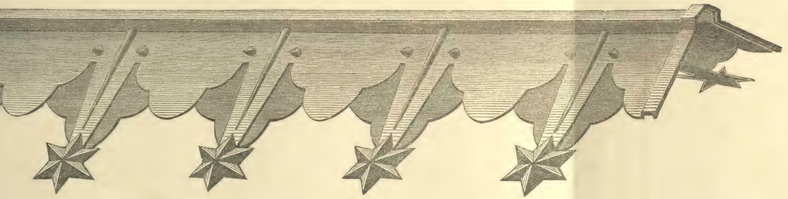
Spigot END.

Faucet END.

MACFARLANE'S PATENT.

RIDGE PLATES.

No. 26.



16 × 16 inches

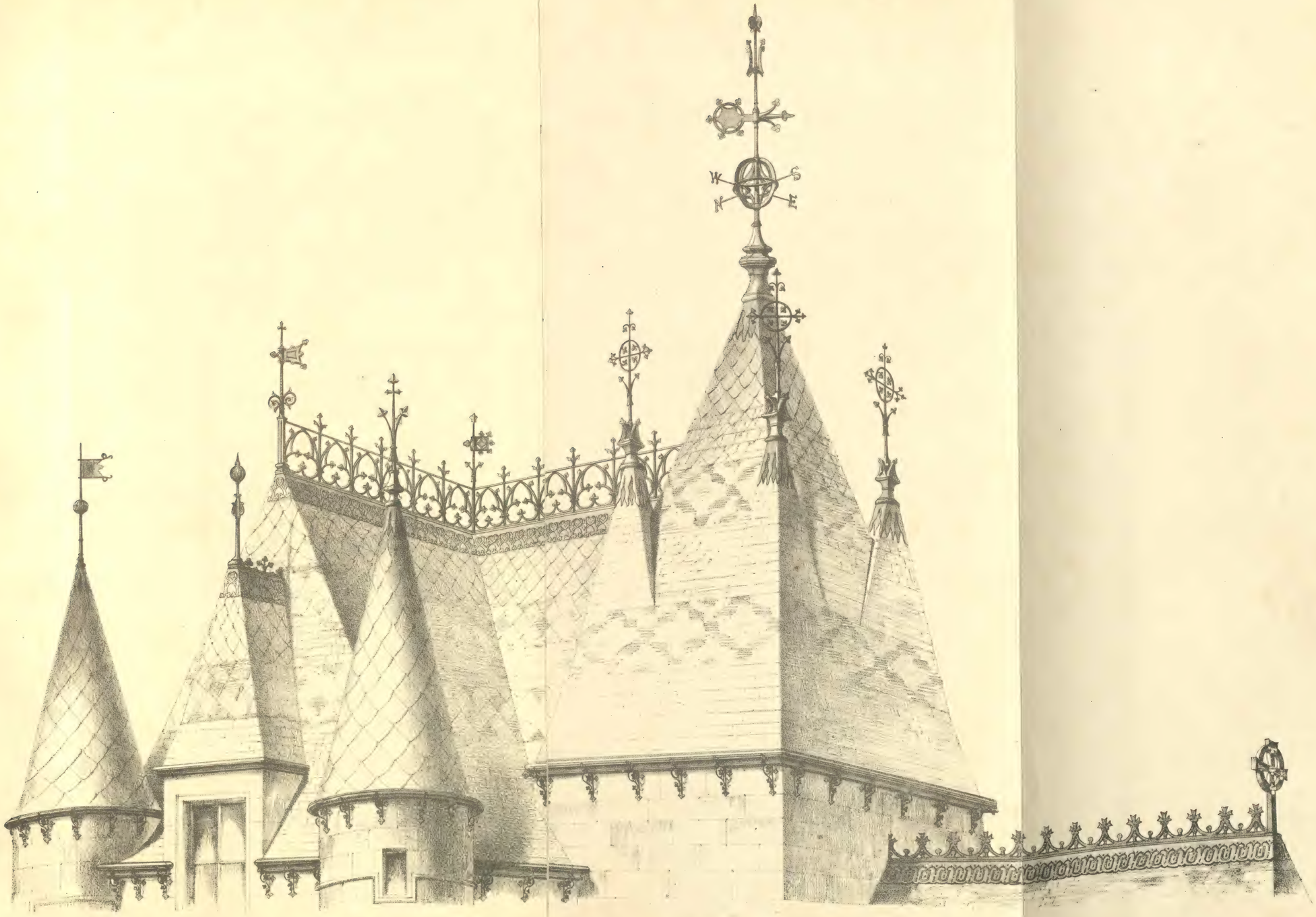
Made to suit the following pitches of roof:—
$\frac{3}{16}$, $\frac{4}{16}$, $\frac{5}{16}$, $\frac{6}{16}$, $\frac{7}{16}$, $\frac{8}{16}$, $\frac{9}{16}$, and $\frac{10}{16}$ of span, *see page* 106.

Scale of Drawings, 1¼ inch—1 foot.

Sections real Size,—inside measure.

No. 27.

13½ × 13½ inches.



MACFARLANE'S EXAMPLES, *showing various modes of applying Cresting, Finials, &c., to Buildings.*

CRESTING.

Cresting for Roofs, Walls, &c.—There has been a gradually increasing desire evinced in the present day to employ this element of Roof decoration more generally than has hitherto been the case, and we have exerted our best efforts to produce a class of designs simple in their constructive parts, and thoroughly suited for their intended purposes.

All our patterns of Cresting are in four feet lengths, and any pattern may be applied to the following different purposes, namely:—Ridge Cresting, Eave Cresting, Plat Cresting, Wall Cresting, Balconies, Balconets, Gallery front, Pulpit, Screen Rails, Window Guards, &c.

Ridge Cresting.—We can fit any pattern of Cresting to any pattern or size of Ridge Plate in our Catalogue, but it is desirable in all cases to have the Ridge Plate of such a size and design as to correspond with the Cresting.

Eave Cresting.—This feature in Roof decoration has other advantages than that of an ornamental accessary. In climates such as our own, subject to snow storms, it is desirable to make provision for preventing the snow sliding down in masses, endangering the passers by, choking up the gutter, and causing the water to overflow its channel, and soak through into the building.

Plat Cresting.—Our various patterns furnish many pleasing designs, suitable for Mansard and other roofs, having Lead plats.

Wall Cresting.—Many patterns of our Cresting will be found suitable for Screen Walls, Bay Windows, &c.

Balconies.—Many of our Cresting designs, by a slight alteration of the pattern, will be found admirably adapted for Balconies, either in combination with the Ornamental Brackets and sole (illustrated at pages 129 and 129½), or resting on a stone sole, projecting from the wall of the building, &c.

Balconets for Windows, &c.—Besides the designs shown specially adapted for Balconets, many of the patterns of our Cresting will be found suited for the same purpose by a slight modification.

Gallery front, Pulpit, Screen Rails, Window Guards, &c.—Though specially designed as Cresting, will be found that very slight modifications will adapt them for these purposes.

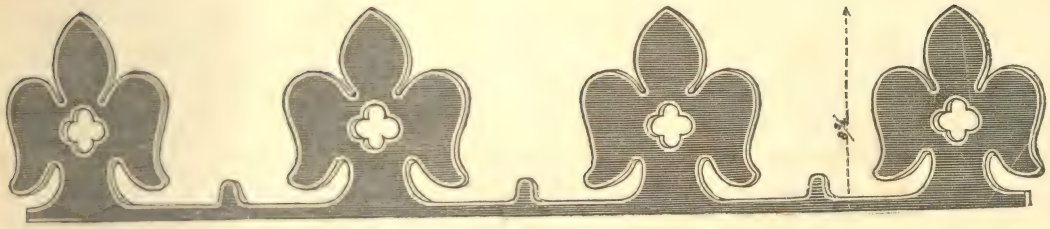
In order that the various details may be clearly laid down in the Architect's plans, our illustrations are all to a given scale; we have also given *several illustrative sheets of drawings*, showing various modes of applying our fittings to buildings.

Architects' specifications and schedules, besides describing the No. and size of Cresting, should always state the No. and size of Ridge Plate, along with any other details for adapting them to the Building.

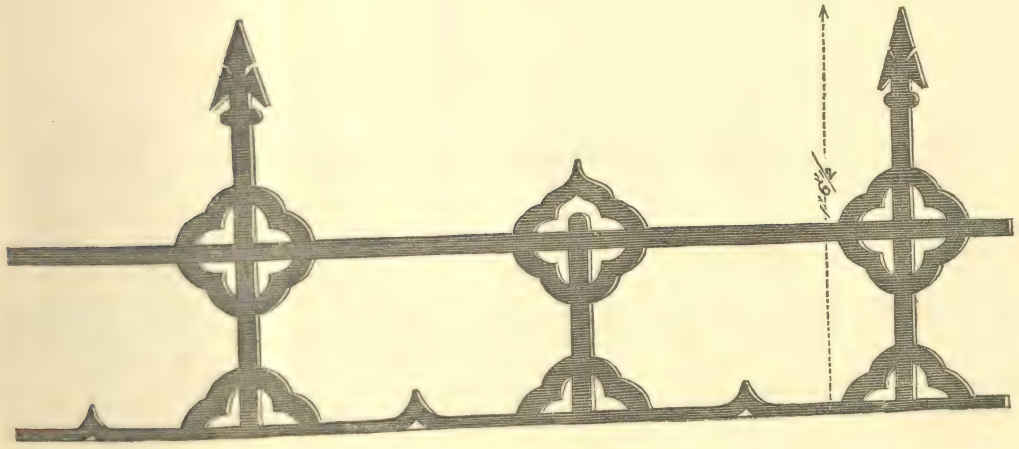
In ordering Cresting our customers will please state the No. and size, also the No., size, and pitch of Ridge Plate or other connections, and by giving us a plan of the roof along with the necessary details and exact measurements, we will furnish them accordingly, all properly marked, and ready for fitting up, see page 104½ for examples of the simplest mode of ordering these goods.

CRESTING.

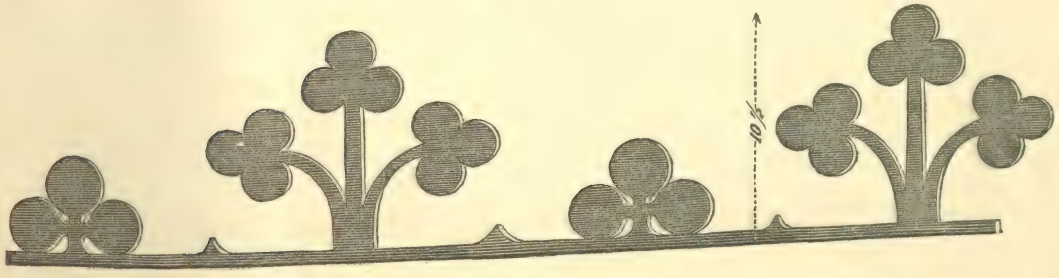
No. 2.



No. 3.



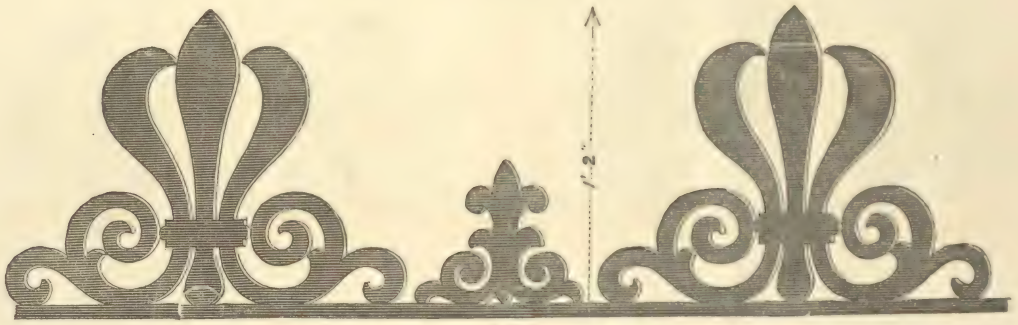
No. 4.



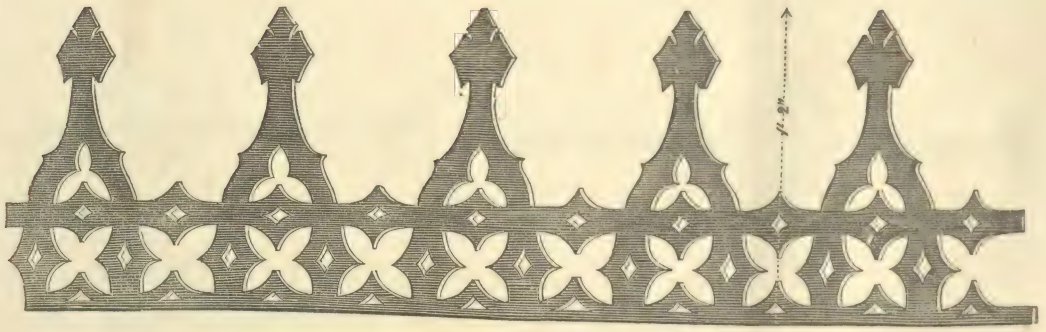
Scale, 1½ inch,—1 foot.

CRESTING.

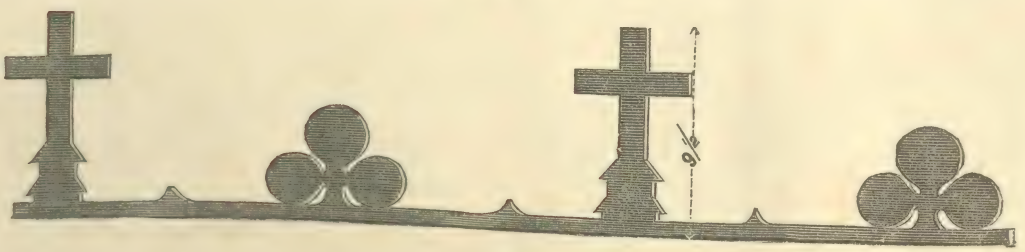
No 5



No. 6.



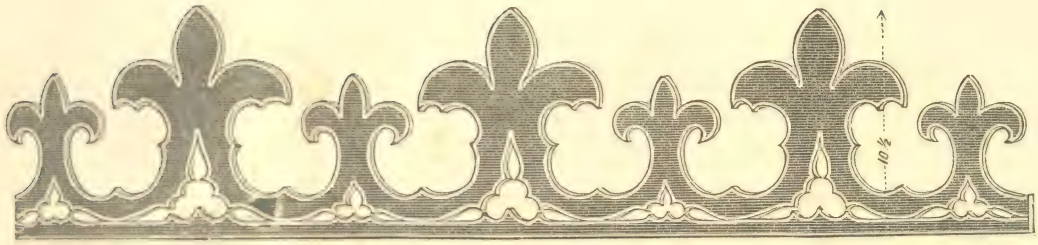
No. 7.



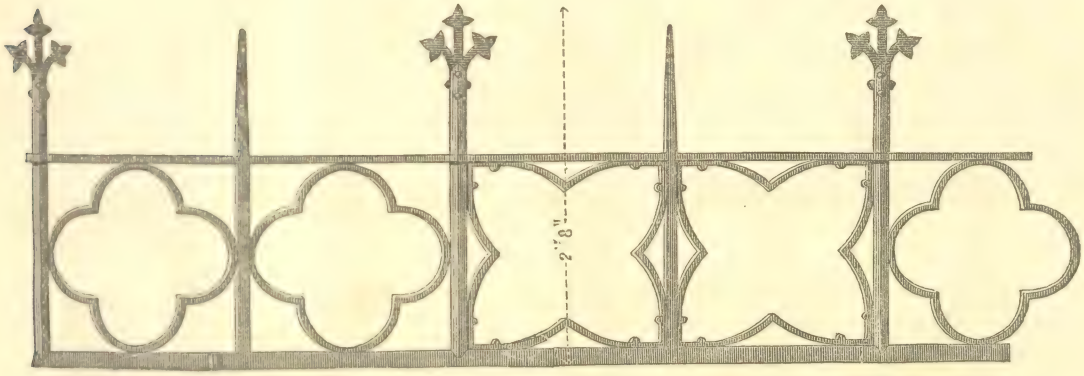
Scale, 1½ inch—1 foot.

CRESTING.

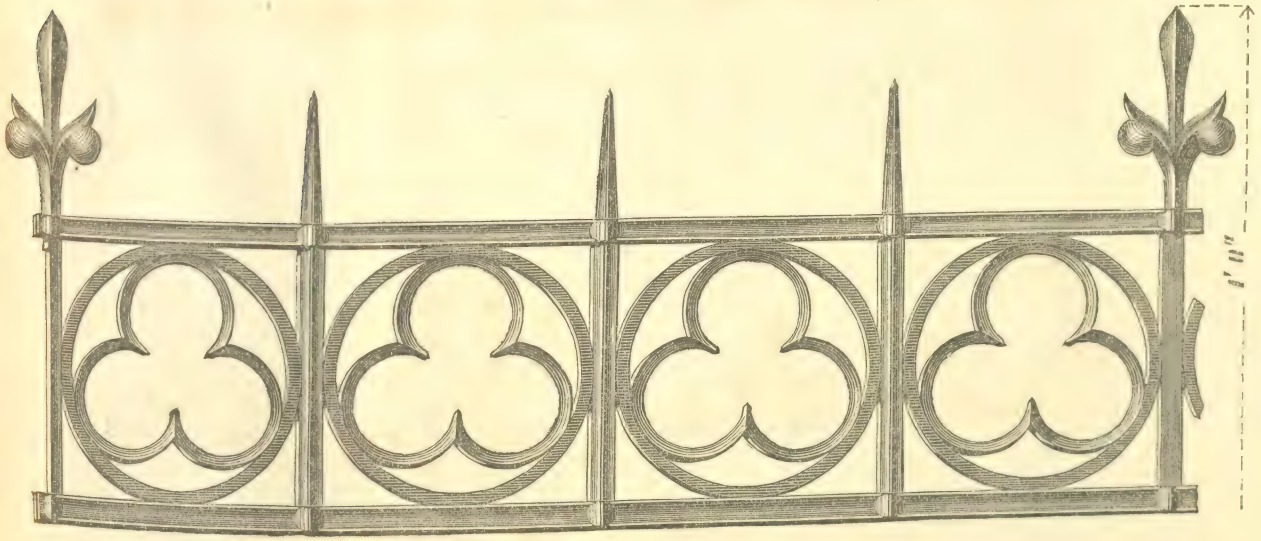
No. 9.



No. 10.



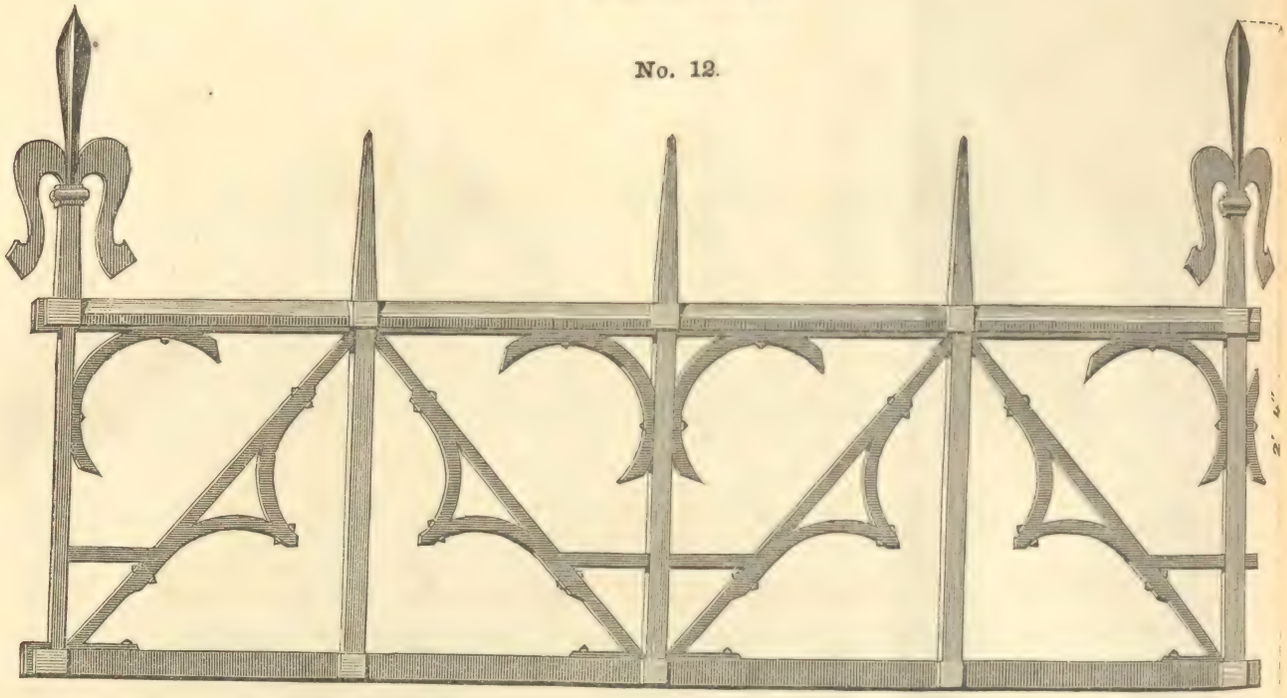
No. 11.



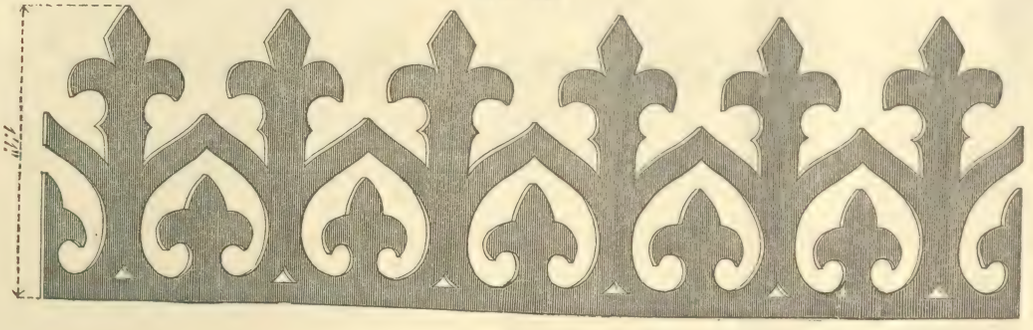
Scale, 1½ inch—1 foot.

CRESTING.

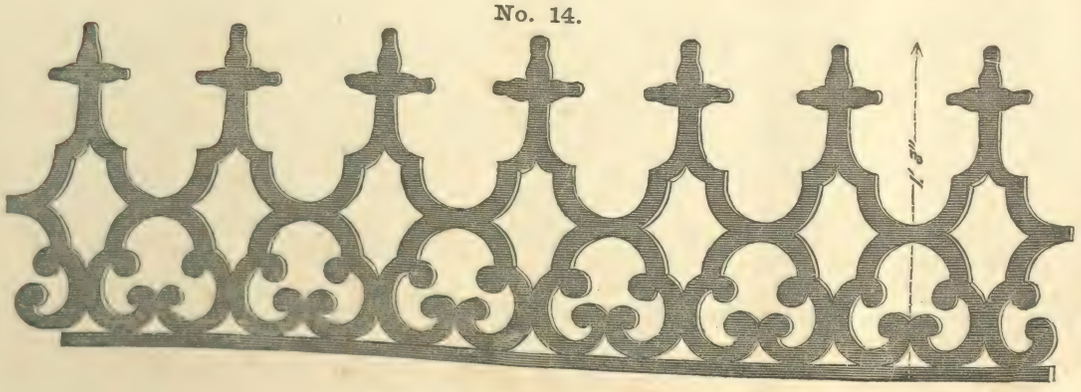
No. 12.



No. 13.



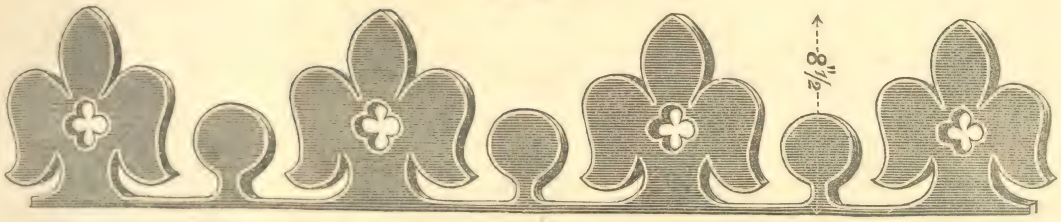
No. 14.



Scale, 1½ inch—1 foot.

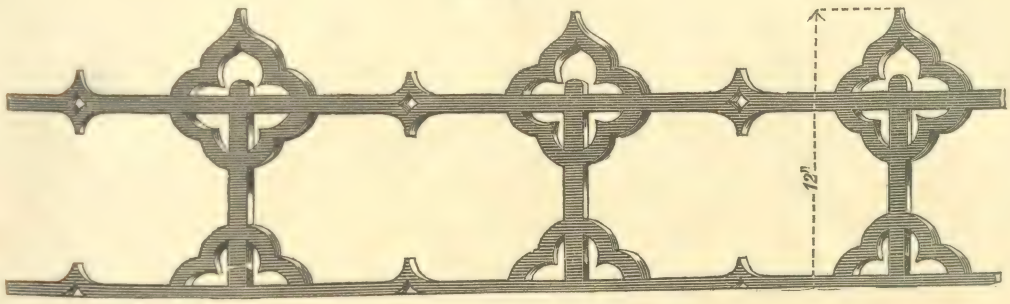
CRESTING.

No. 15.

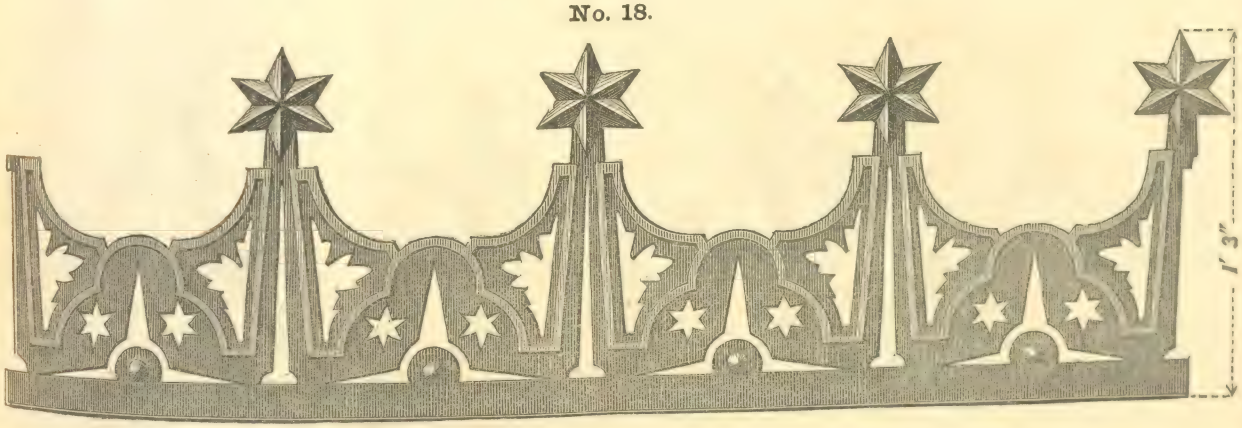


No. 16.

No. 17.



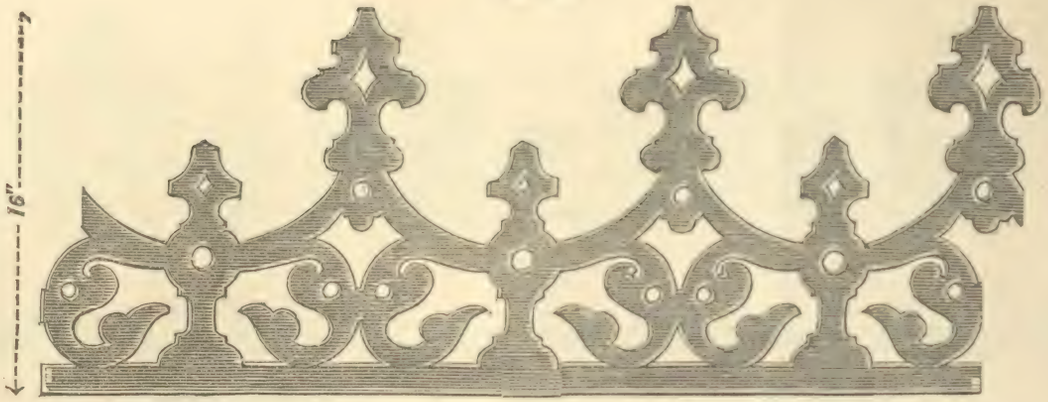
No. 18.



Scale, 1½ inch—1 foot.

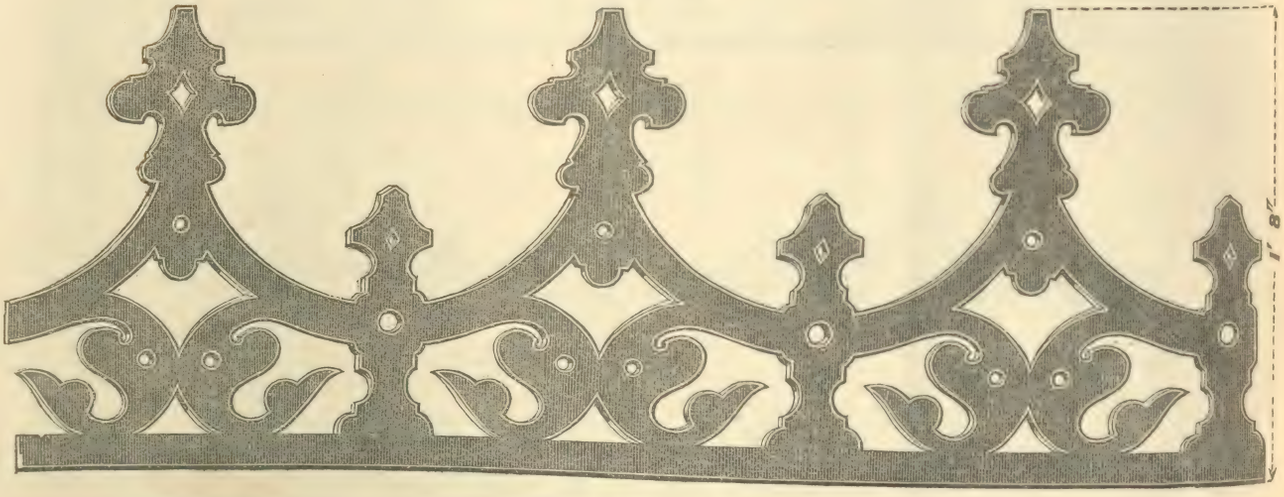
CRESTING.

No. 19.



1 foot 4 inches high.

No. 19.



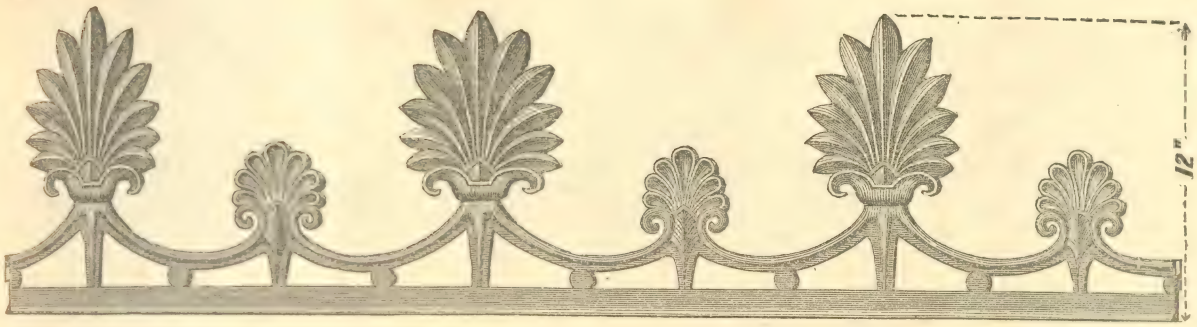
1 foot 8 inches high.

No. 31.

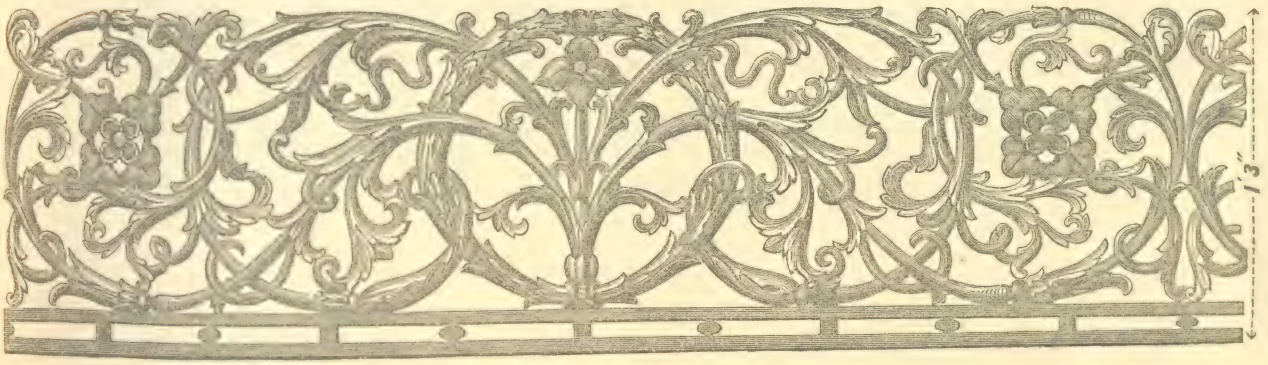
Scale, 1½ inch—1 foot.

CRESTING.

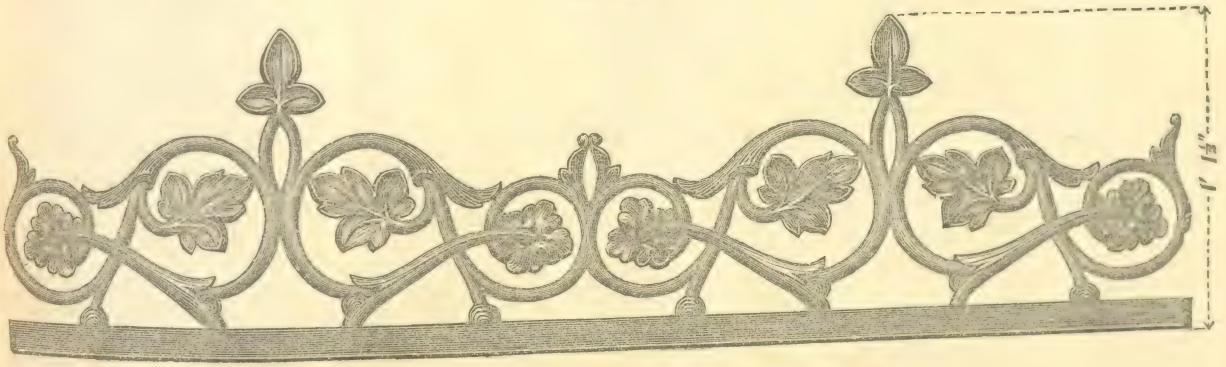
No. 32.



No. 33.



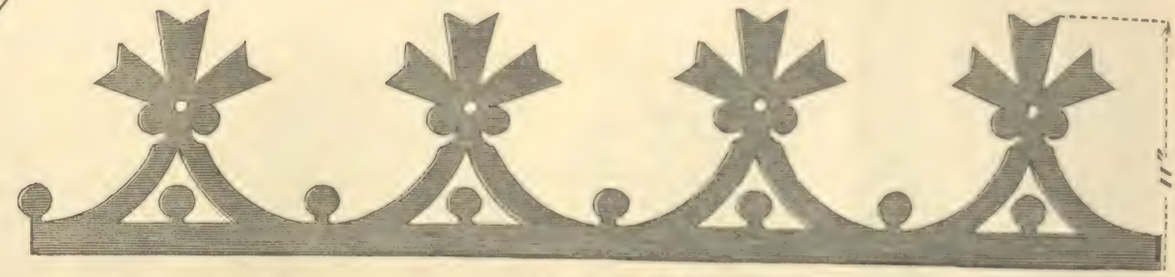
No. 34.



Scale, 1½ inch—1 foot.

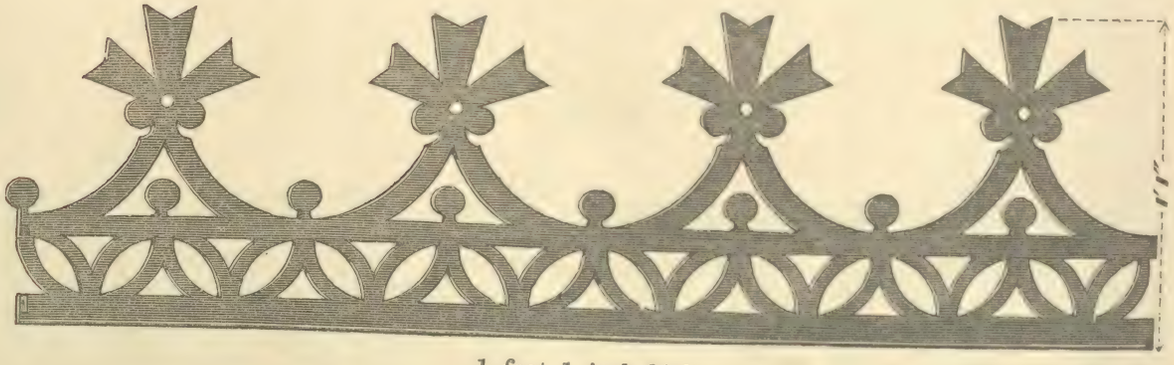
CRESTING.

No. 35.



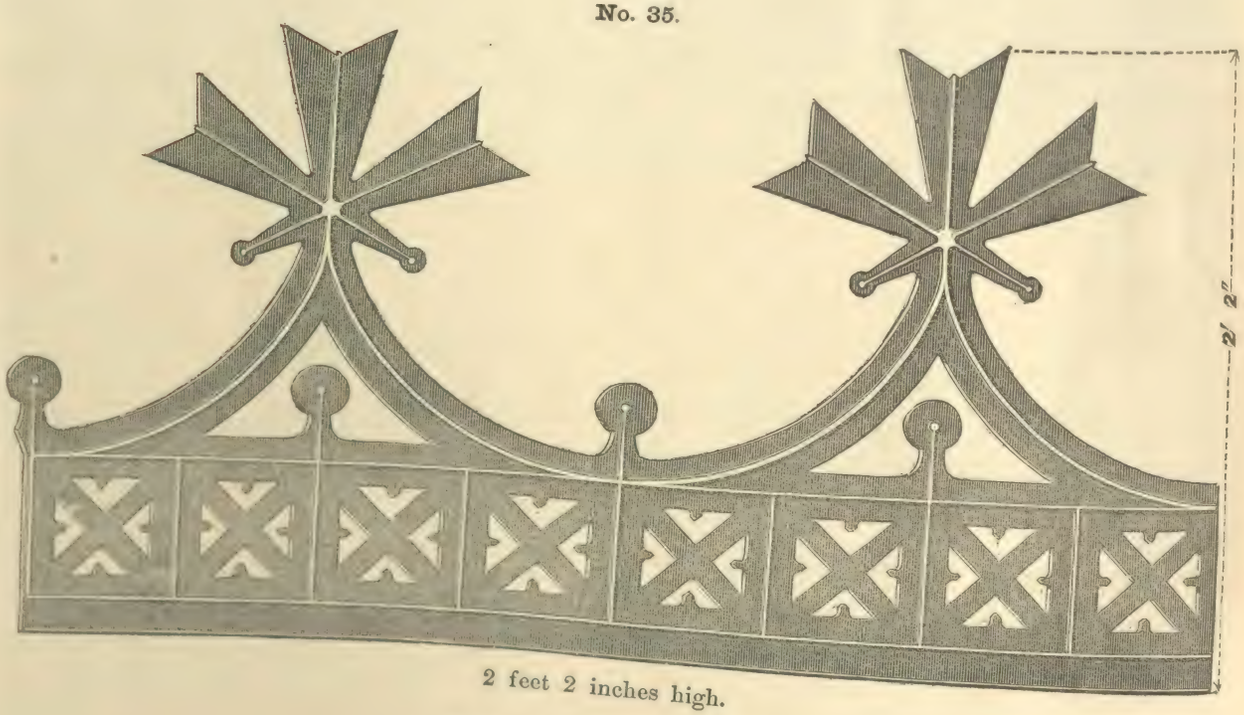
11 inches high.

No. 35.



1 foot 1 inch high.

No. 35.

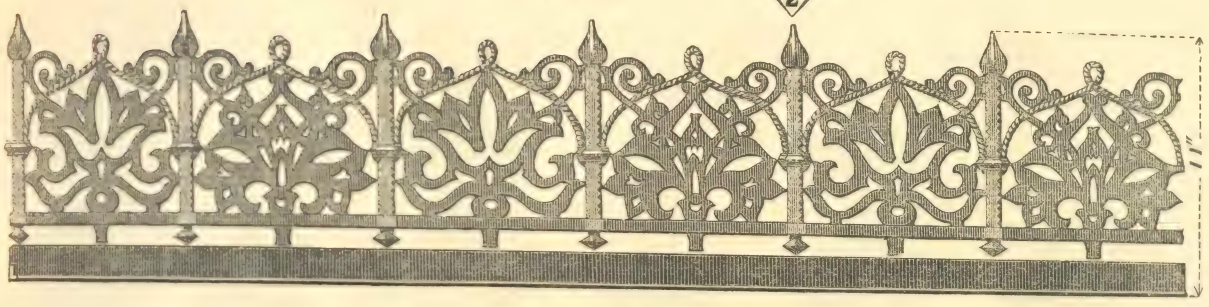


2 feet 2 inches high.

Scale, 1½ inch—1 foot.

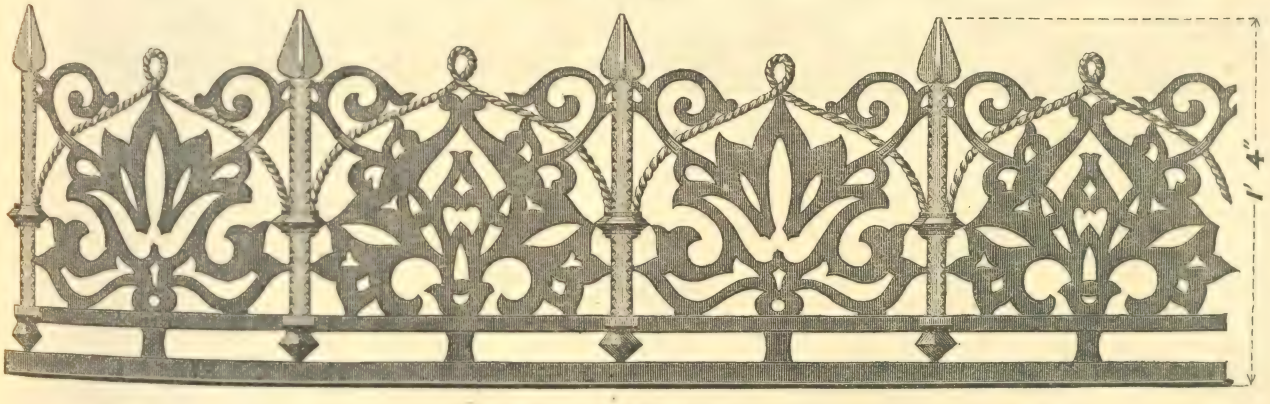
CRESTING.

No. 36.



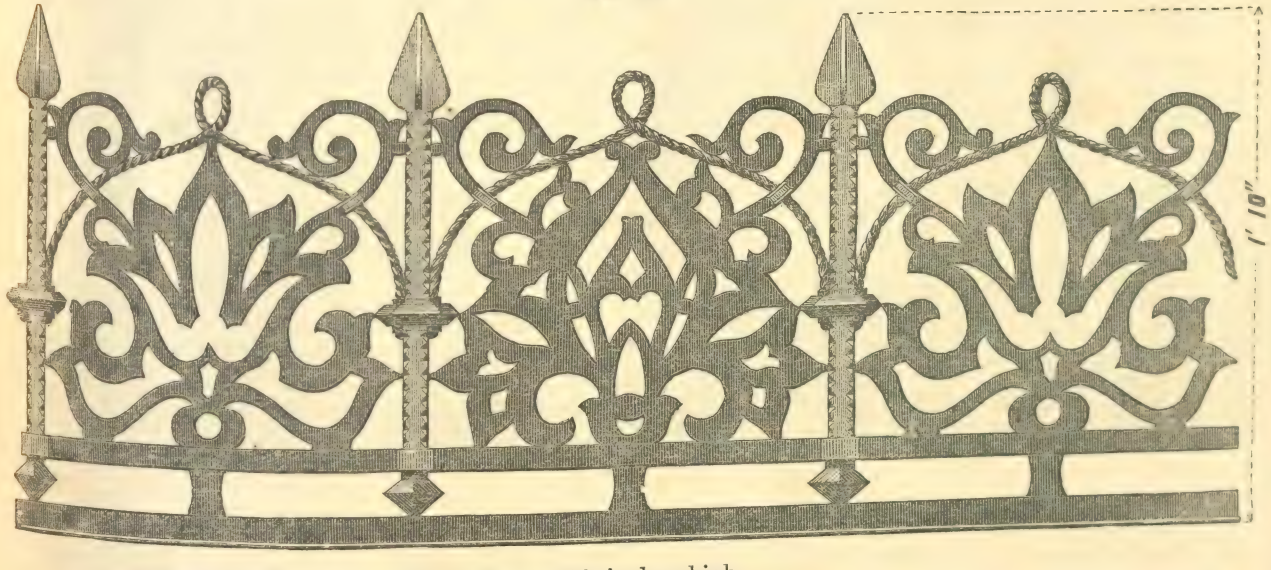
11 inches high.

No. 36.



1 foot 4 inches high.

No. 36.



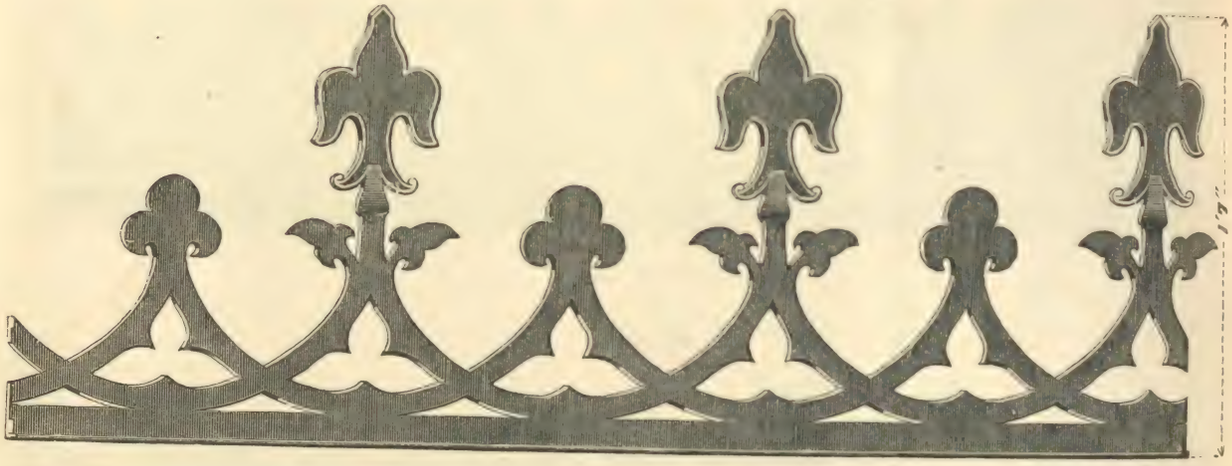
1 foot 10 inches high.

At the termination of a stretch of this Cresting, or at the Corners, &c., a No. 29 Finial (see page 146), or any other suitable pattern of Finial, can be added to it.

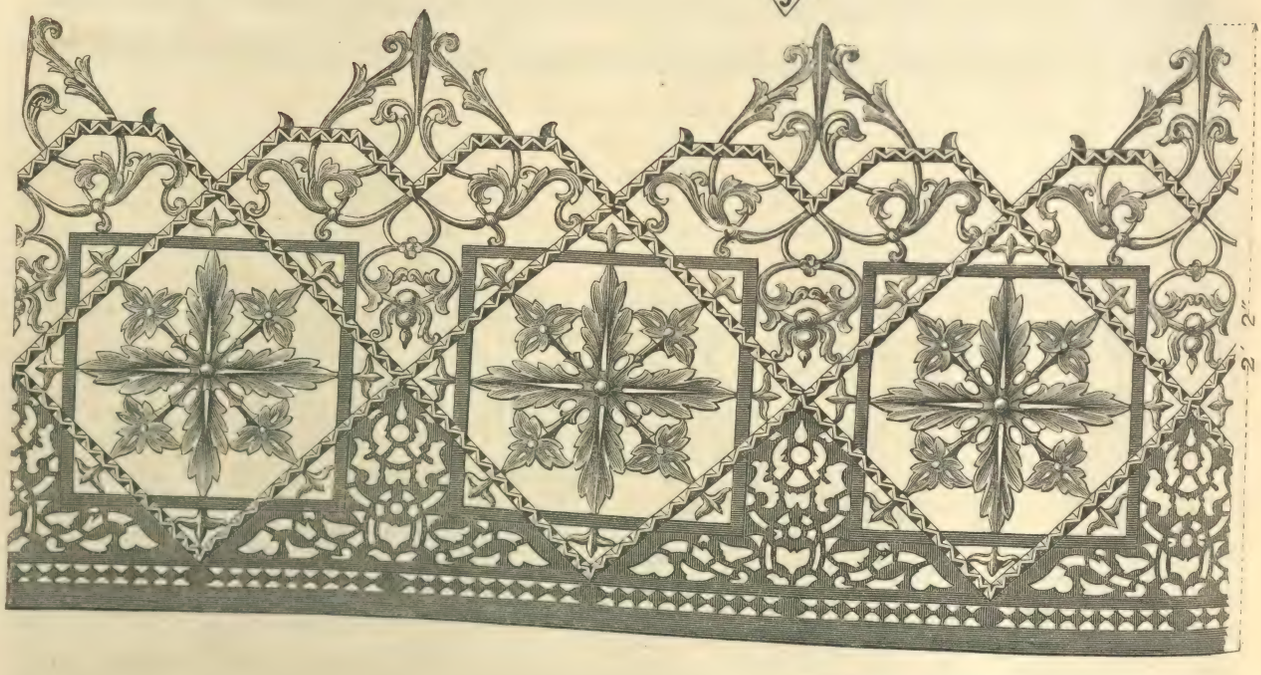
Scale, 1½ inch—1 foot.

CRESTING.

No. 37.



No. 38.



At the termination of a stretch of this Cresting, or at Corners, &c., a No. 28 Finial (see page 145), or any other suitable pattern of Finial can be added to it.

Scale, 1½ inch—1 foot.

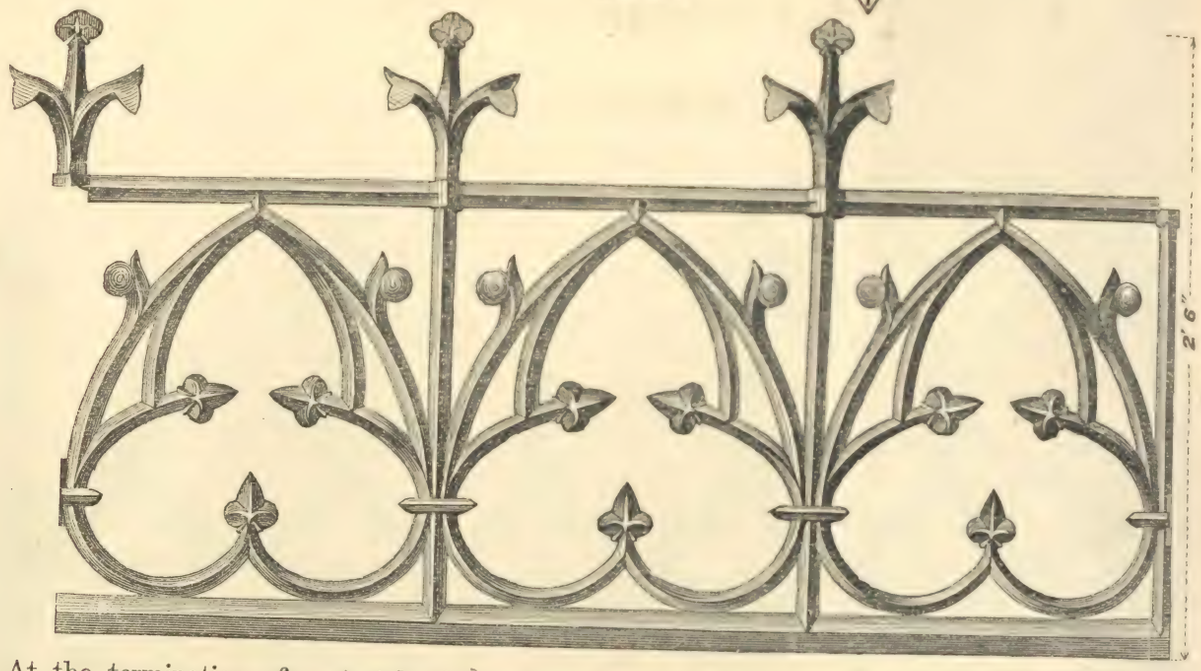
CRESTING.

No. 39.

This pattern has an upright standard, as shown in drawing, between each four feet length of panel, and at the termination of a stretch of Cresting, or at the Corners, &c., a No. 50 Banneret, (see page 148), or any other suitable pattern of Finial can be added to it.

Scale, 1½ inch—1 foot.

No. 40.



At the termination of a stretch of this Cresting, or at the Corners, &c., a No. 49 Banneret, (see page 148), or any other suitable pattern of Finial can be added to it.

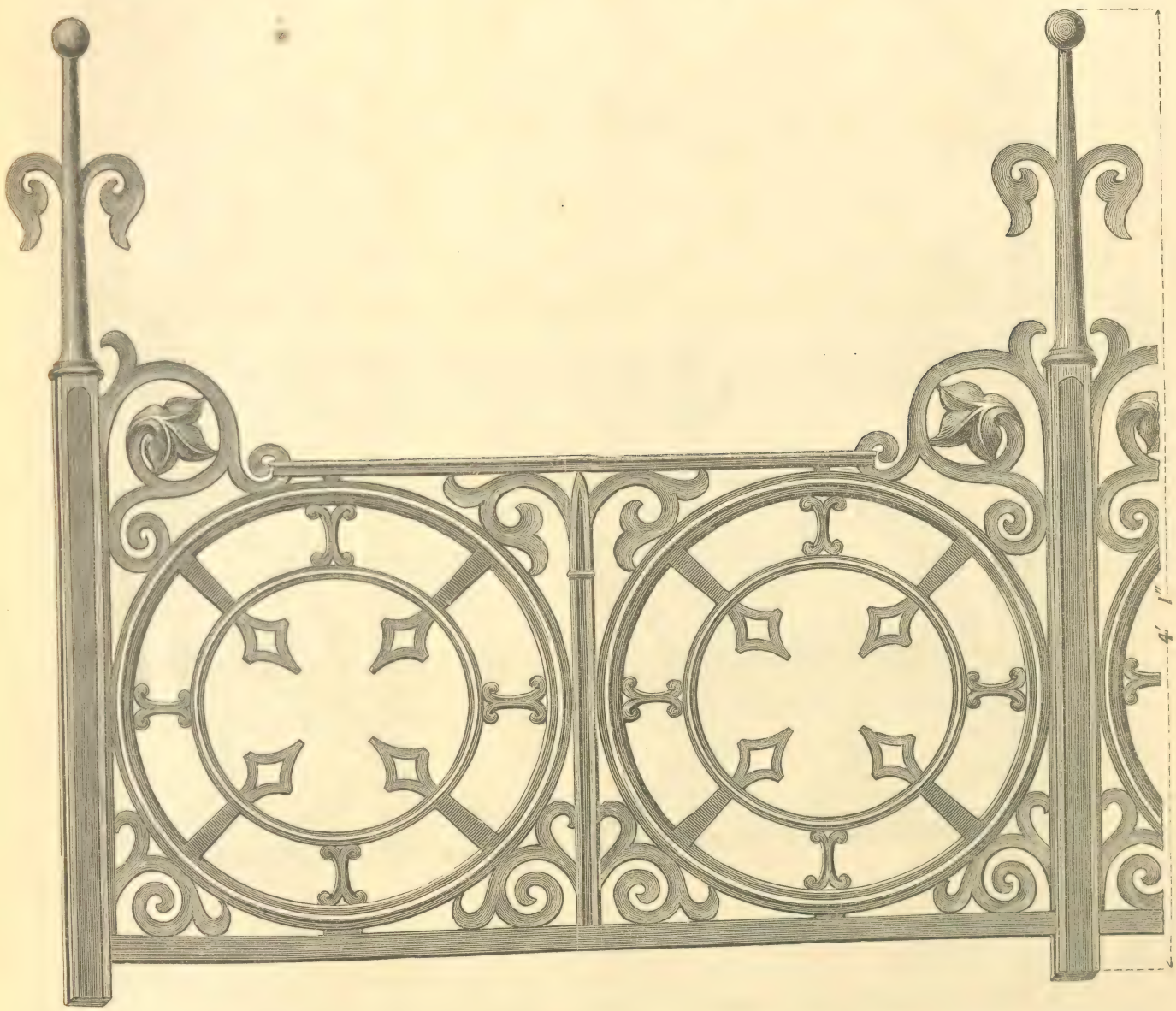
No. 41.

At the termination of a stretch of this Cresting, or at the Corners, &c., a No. 52 Banneret, (see page 148), or any other suitable pattern of Finial can be added to it.

Scale, 1½ inch—1 foot.

CRESTING.

No. 42.

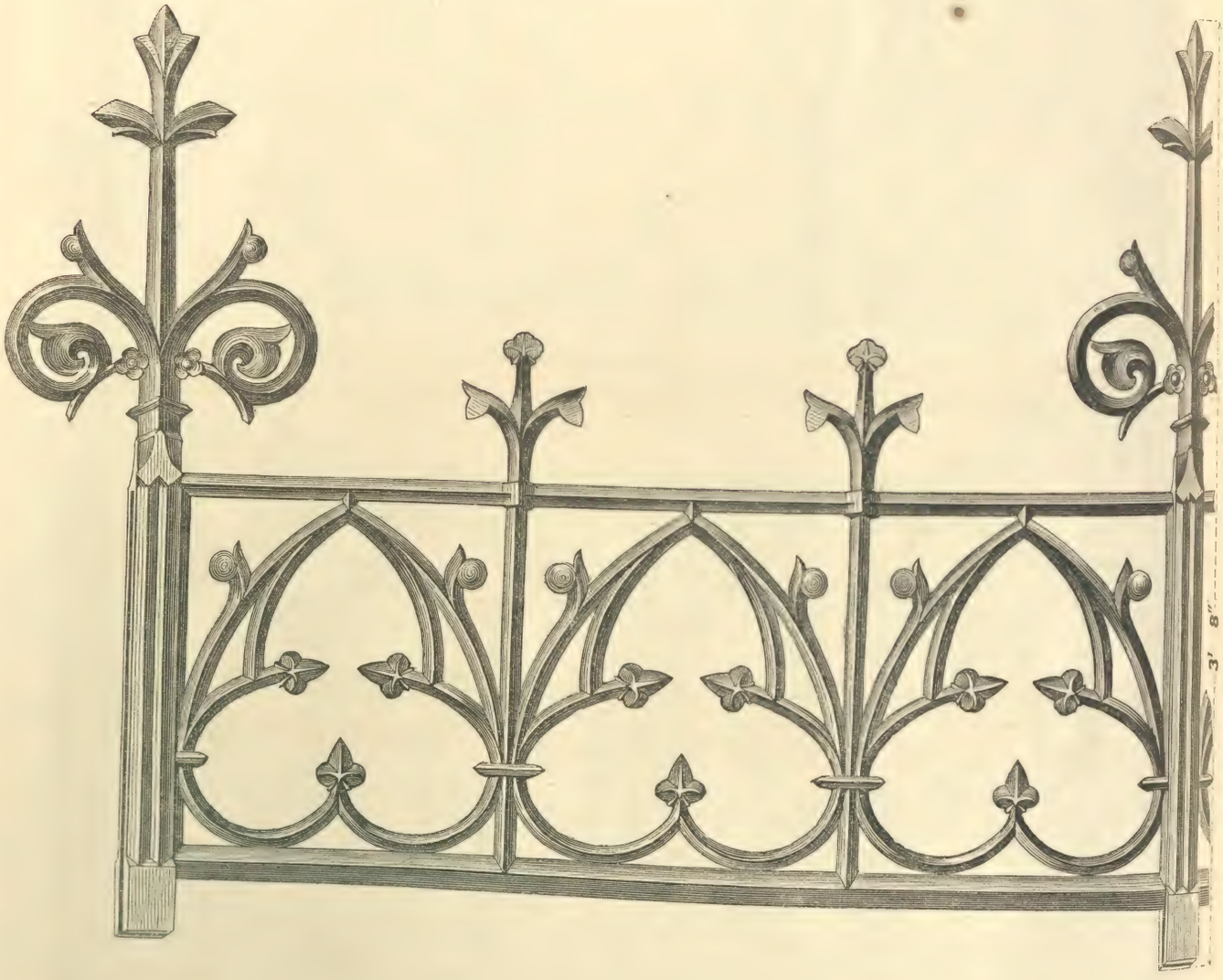


This pattern of CRESTING has an upright standard, as shown in drawing, between each four feet length of pannel, and at the termination of a stretch of Cresting, or at corners, &c., a No. 48 Banneret (see page 148), or any other suitable pattern of Finial can be added.

Scale, 1½ inch—1 foot.

CRESTING.

No. 43.

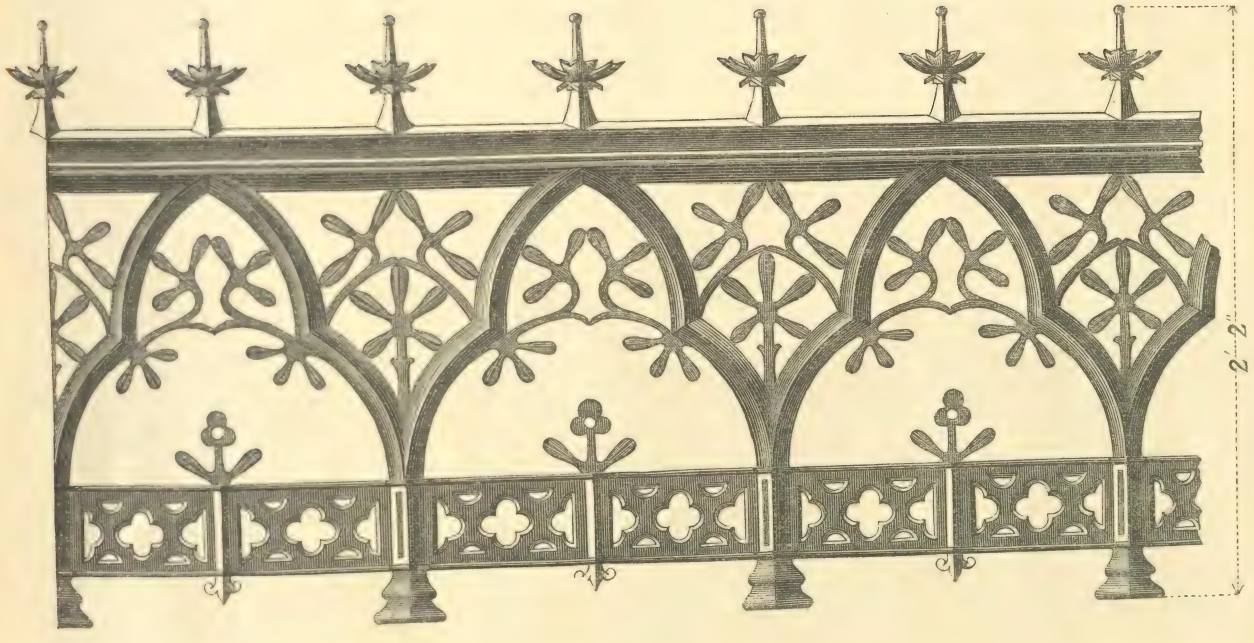


This pattern of Cresting has an upright standard, as shown in drawing, between each four feet length of pannel, and at the termination of a stretch of Cresting, or at the corners, &c., a No. 49 Banneret (see page 148), or any other suitable pattern of Finial can be added.

Scale, 1½ inch—1 foot.

CRESTING.

No. 44.

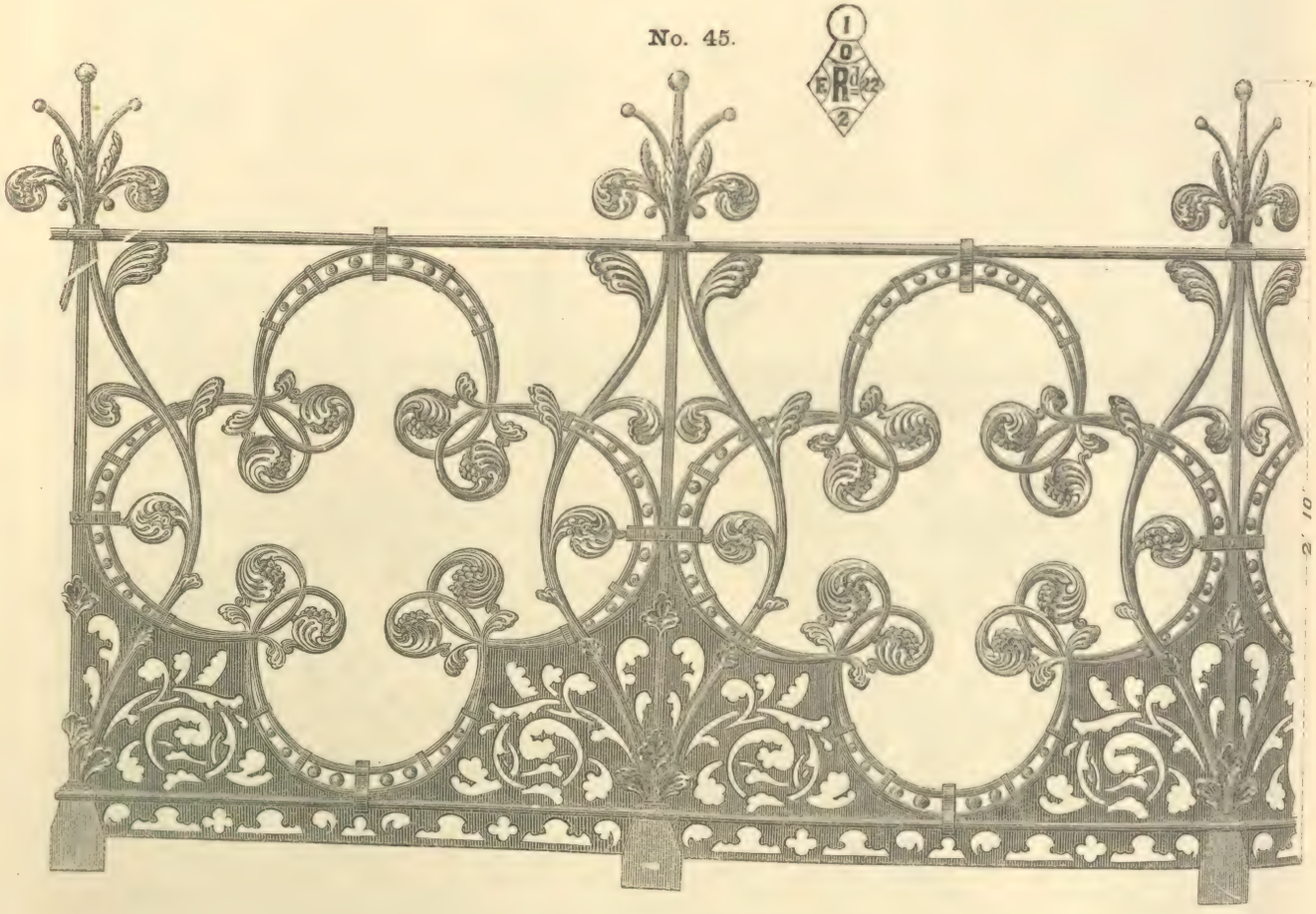


At the termination of a stretch of this Cresting, or at corners, &c., a No. 31 Finial (see page 145), or any other suitable pattern can be added.

Scale, 1½ inch—1 foot.

CRESTING.

No. 45.

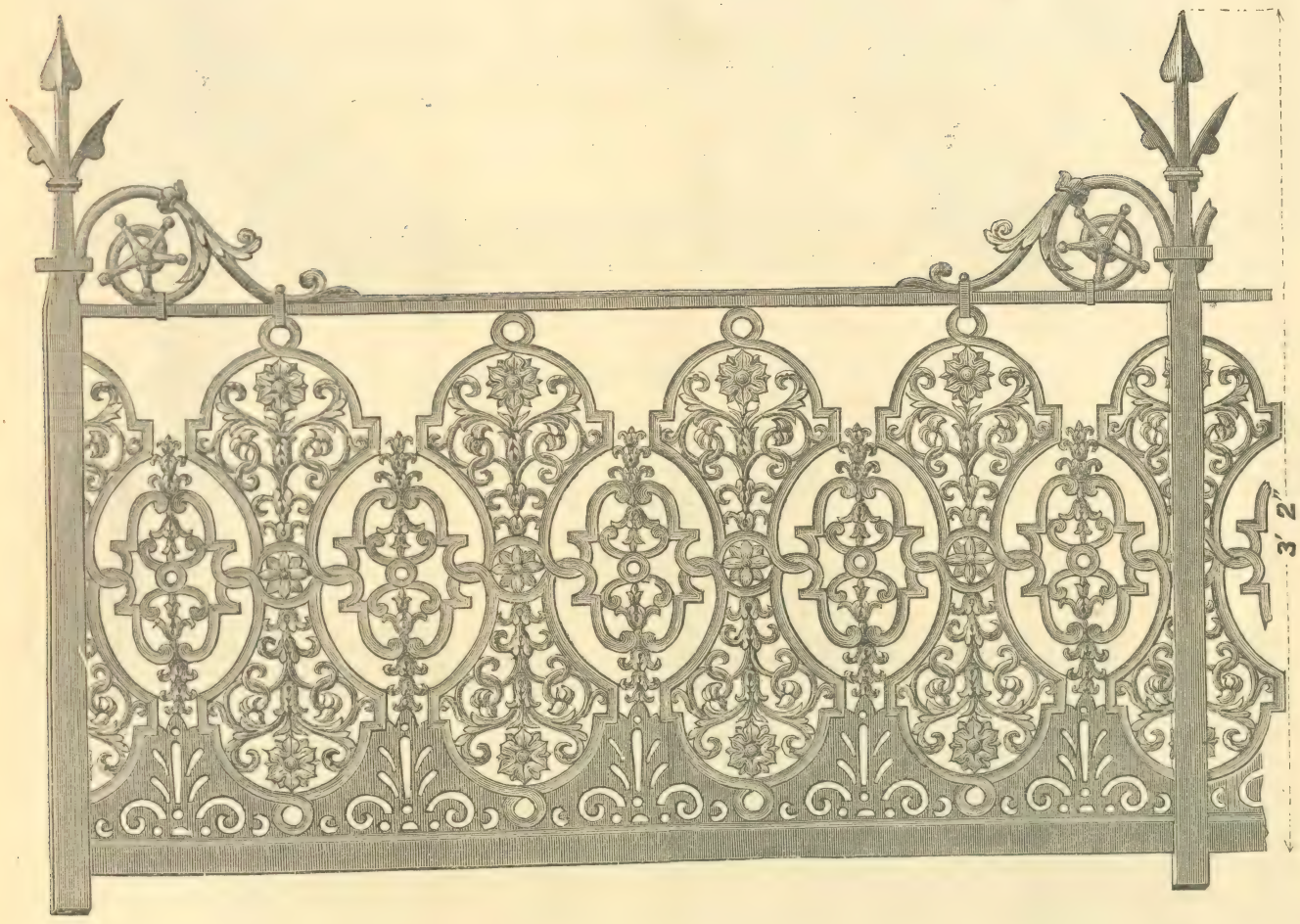


At the termination of a stretch of this Cresting, or at corners, &c., a No. 30 Finial (see page 144), or any other suitable pattern can be added.

Scale, 1½ inch—1 foot.

CRESTING.

No. 46.

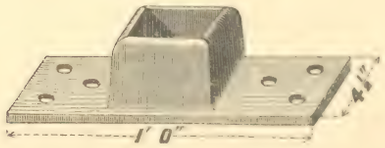


Scale, 1½ inch—1 foot.

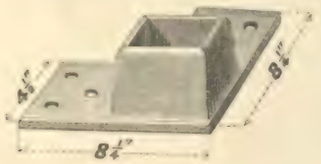
MACFARLANE'S PATENT.

CRESTING CONNECTIONS.

PLAT CREST SOCKET.

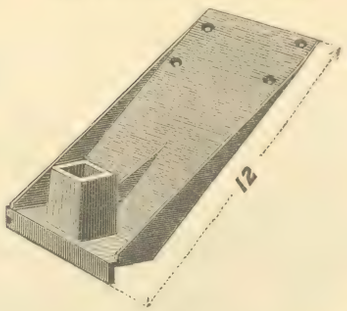


PLAT CREST SOCKET, for Corner.

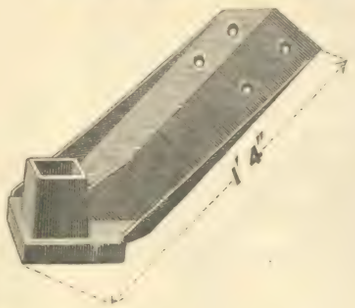


For 1¼, 1½, and 2 inch Pillars.—see page 102.

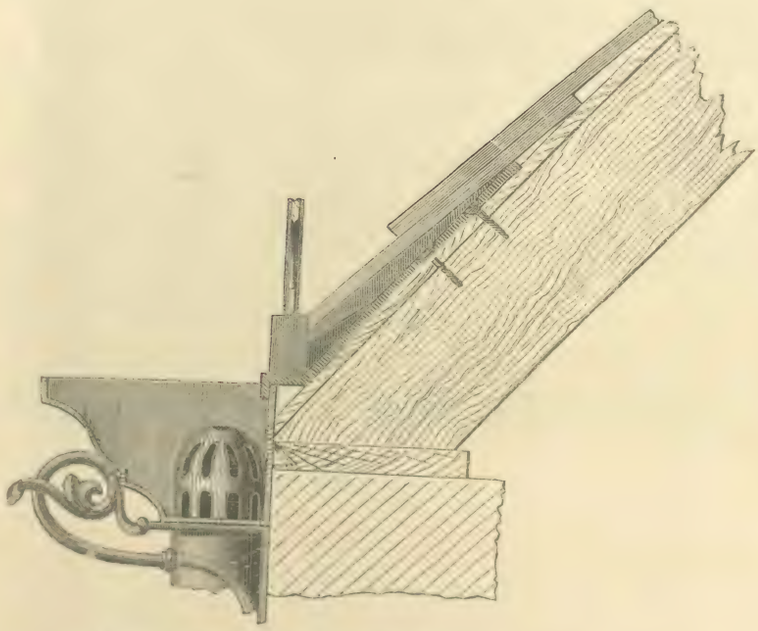
EAVE CREST SOCKET.



EAVE CREST SOCKET, for Corner.



For 1¼, 1½, and 2 inch Pillars.



Adaptation of Eave Crest Socket to building.

Scale, 1½ inch—1 foot.

The adaptation of Eave Cresting to buildings is shown at pages 37, 102, and 104, and by the cross section on this page.

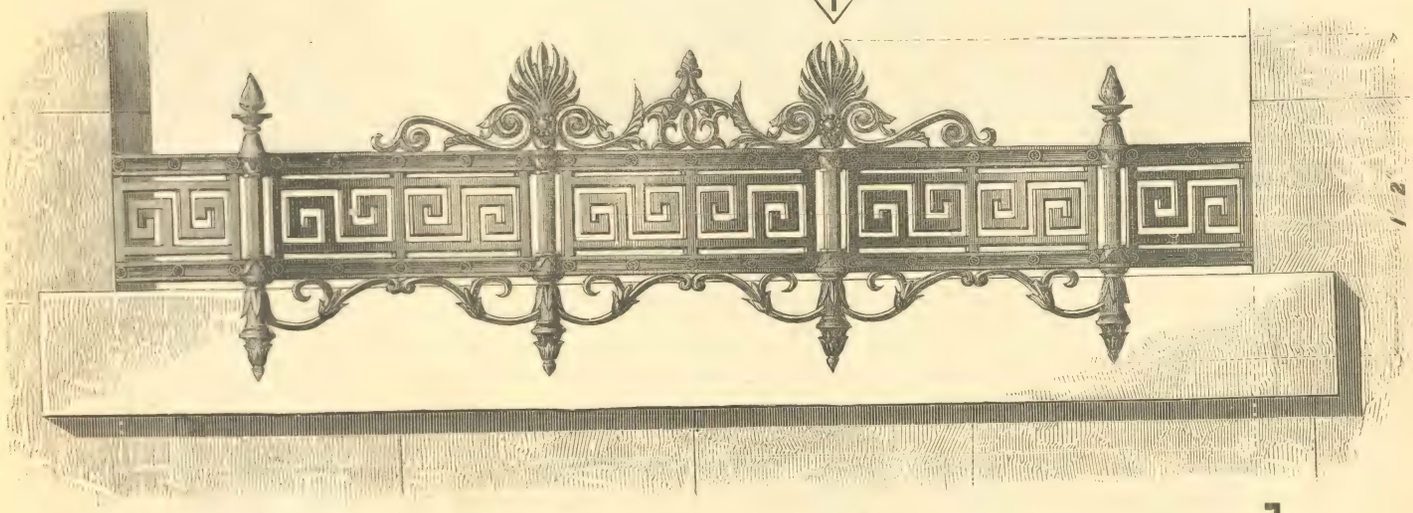
Note.—The detail on page 102 being inaccurately drawn, please substitute the one here illustrated.

BALCONETS.

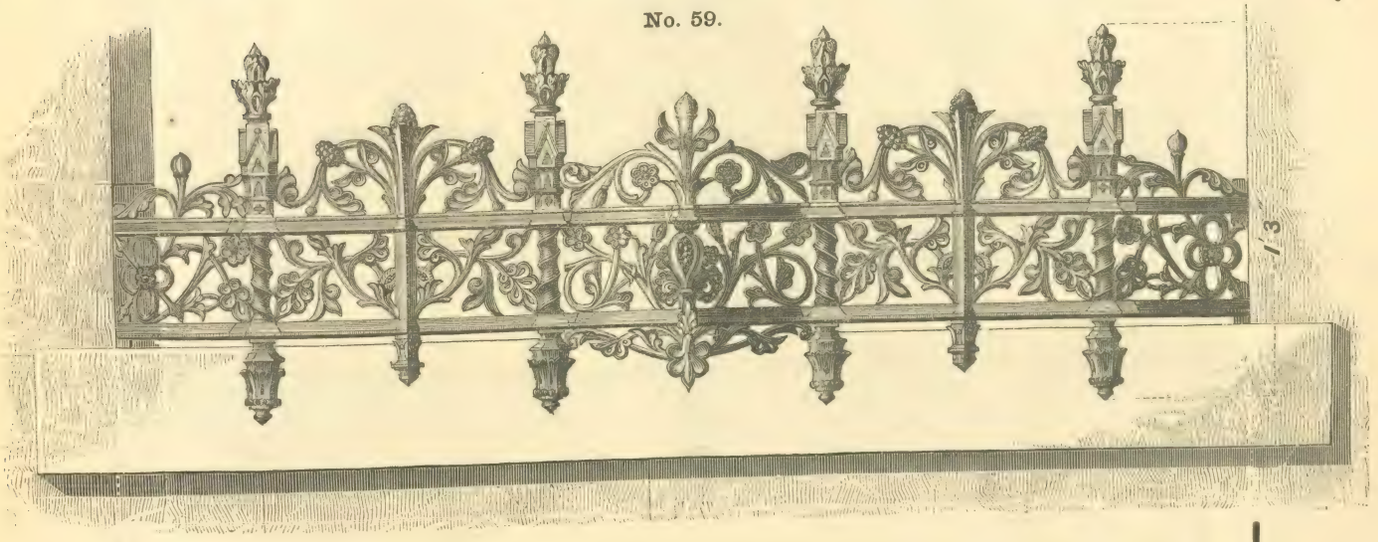
Besides the Balconet designs here shown, any pattern of our Cresting may be applied to the same purpose, by a slight modification of the parts.

They may be attached to the wood of the window sash frame, or otherwise, as may be found most suitable.

No. 58.



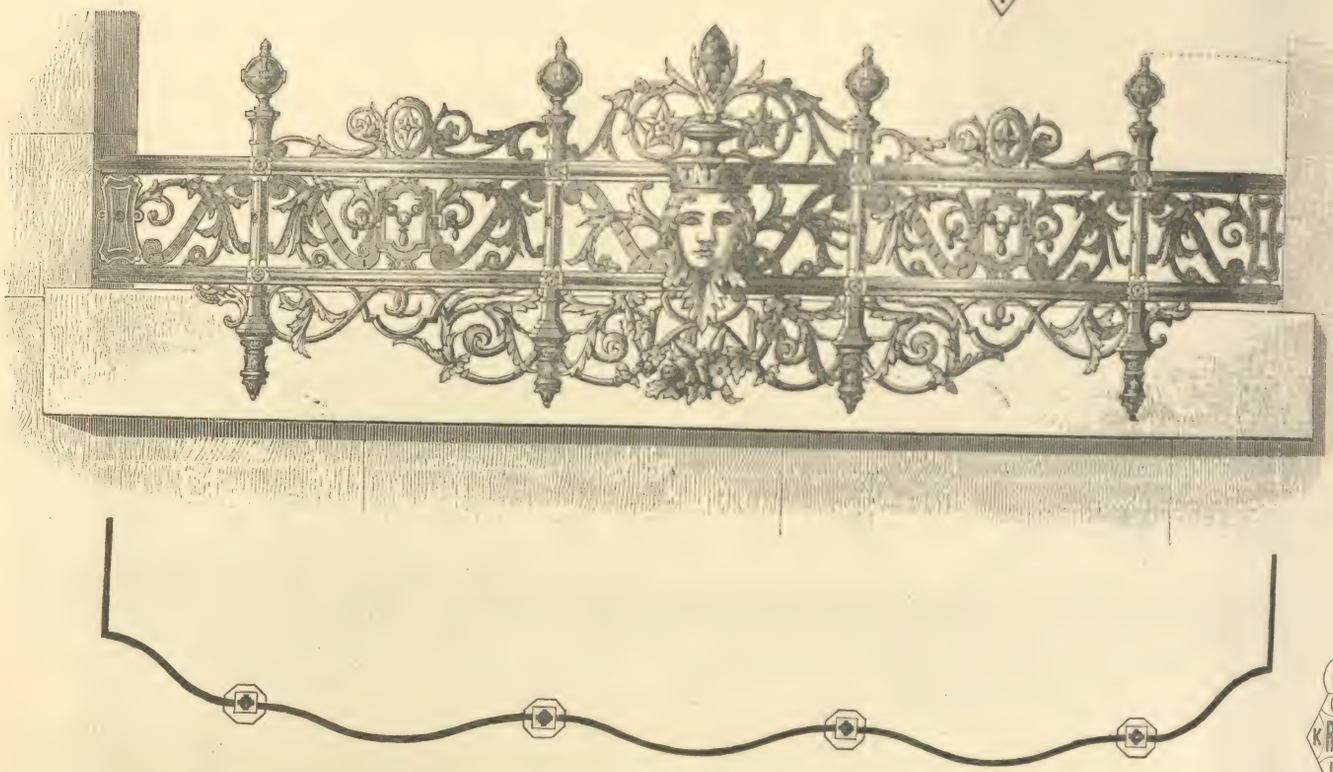
No. 59.



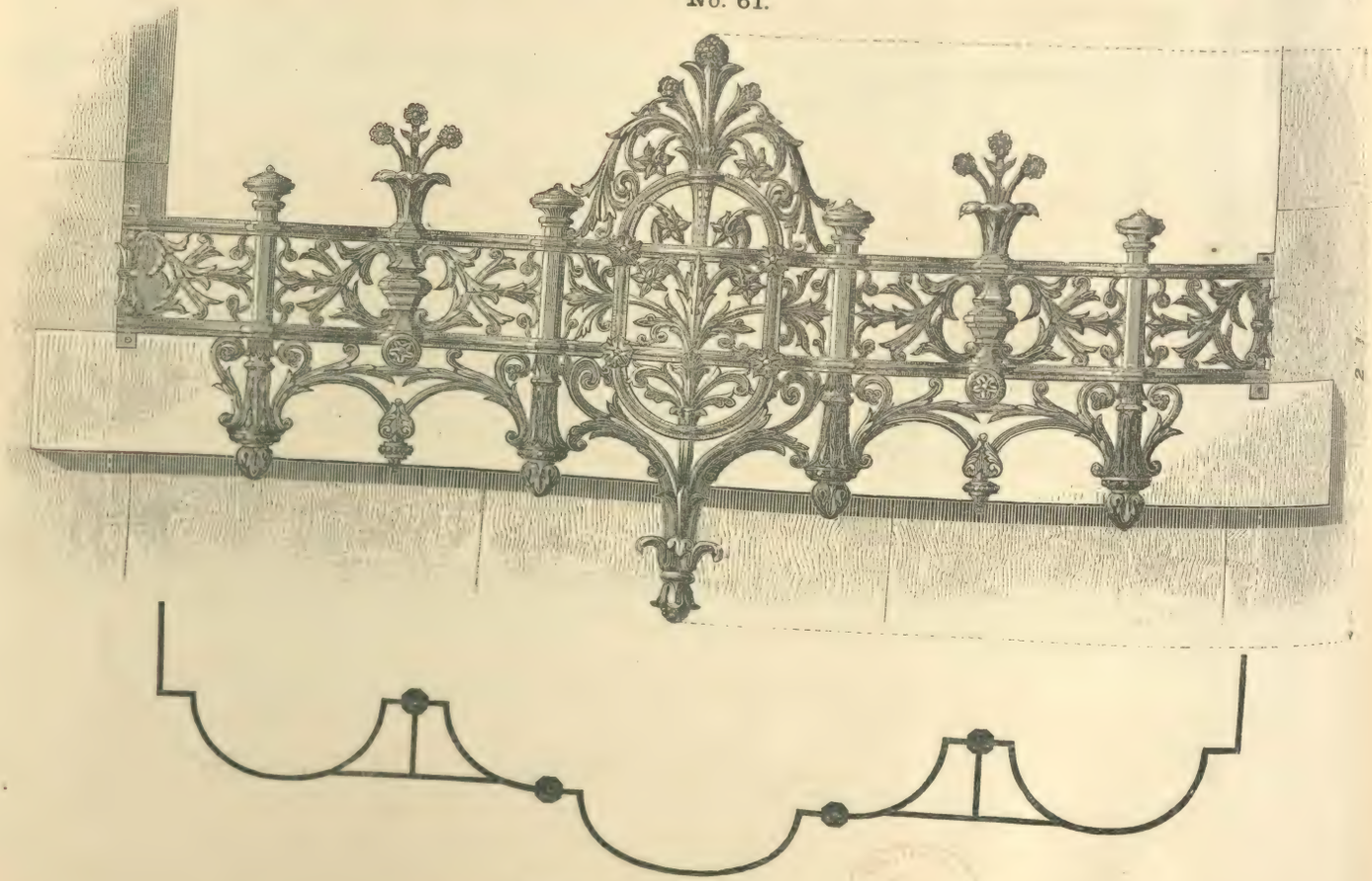
Scale, 1½ inch—1 foot.

BALCONETS.

No. 60.



No. 61.



Scale, 1½ inch—1 foot

MACFARLANE'S BALCONIES.

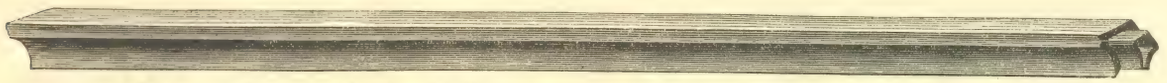
In this class of goods the requirements of every building are so special, that we considered it better not to show Balconies complete, but rather to illustrate the details, and leave the selection and combination to the architect. Every pattern of cresting in our catalogue may be applied to balcony purposes, either in connection with a stone sole provided in the building proper, or in connection with cast iron sole, brackets, and hand rail, as shown on this and the following pages. Any pattern can be made of a circular form to suit the requirements of every conformation of building.

In order that the various details may be clearly laid down in the Architect's plans, our illustrations are all to a given scale; we have also given several illustrated sheets of drawings, showing various modes of applying our fittings to the building, see pages 37, 38, and 104.

Architect's schedules should distinctly specify the No. and Size of cresting, also the No. and Size of the bracket, sole and hand rail, along with any other necessary detail.

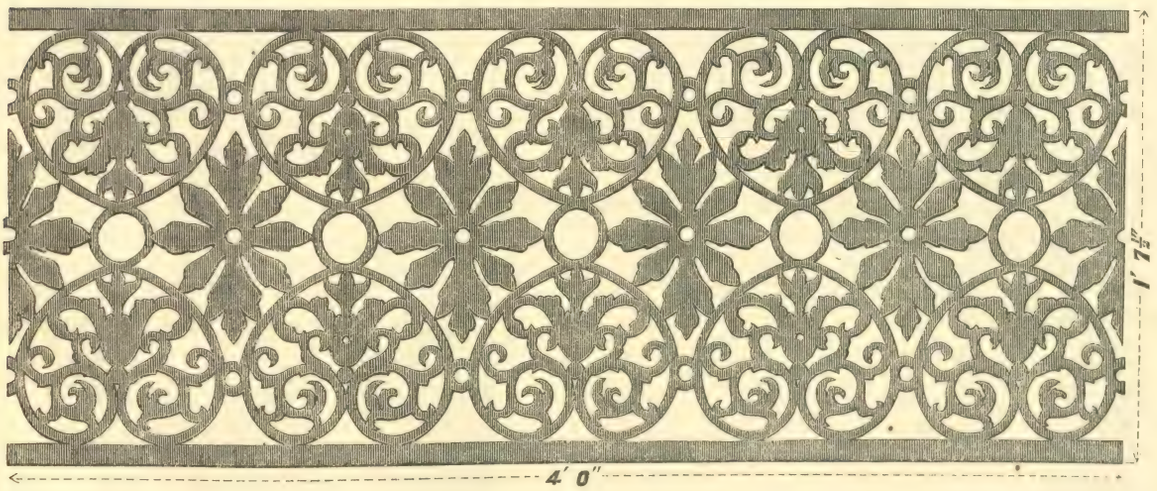
In ordering these goods, our customers should always state the No. and Size of cresting, bracket and hand rail, along with any other necessary detail; and upon our receiving the exact measurements, we can furnish the goods accordingly, ready for fitting up.

BALCONY HAND RAIL.



Of which we make the three following sizes:—2 × 1½, 2½ × 2, and 3½ × 2½ inches.

BALCONY SOLE.



Of which we make the three following sizes:—1 foot, 1 foot 6 inches, and 1 foot 10 inches broad.

Scale, 1½ inch—1 foot.

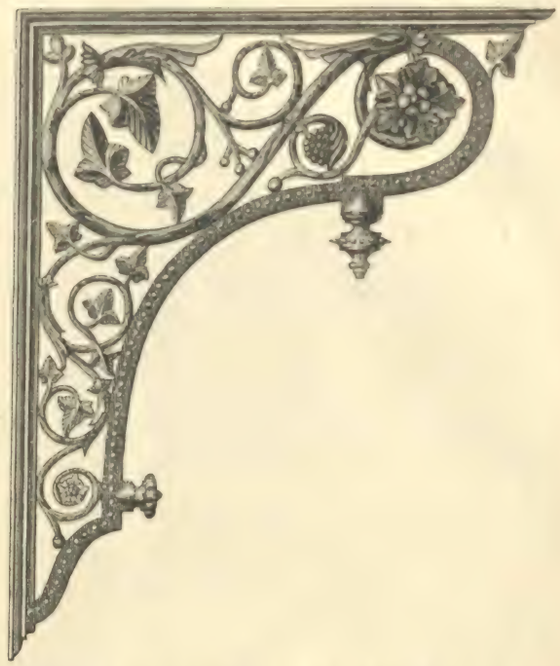
MACFARLANE'S PATENT.

BALCONY BRACKETS.

No. 68.

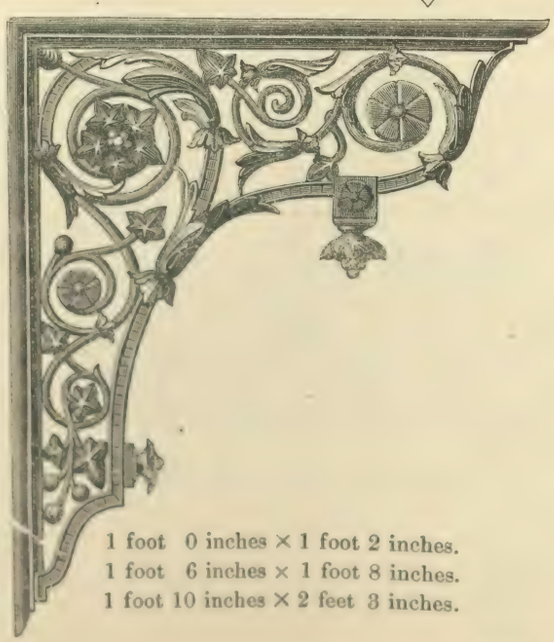
1 foot 0 inches × 1 foot 2 inches.
1 foot 6 inches × 1 foot 8 inches.
1 foot 10 inches × 2 feet 3 inches.

No. 69.



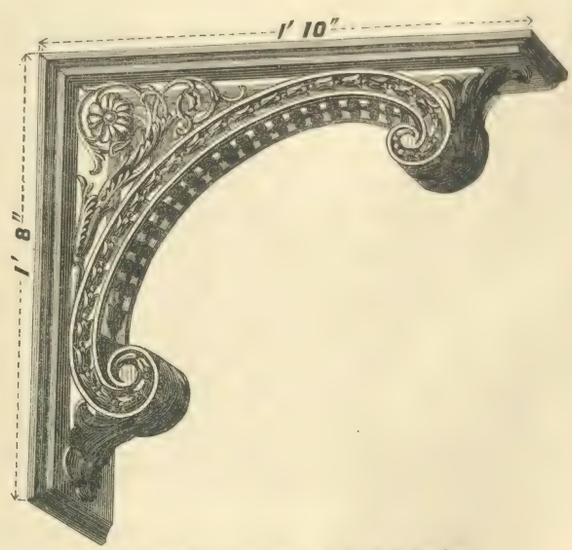
1 foot 0 inches × 1 foot 2 inches.
1 foot 6 inches × 1 foot 8 inches.
1 foot 10 inches × 2 feet 3 inches.

No. 70.



1 foot 0 inches × 1 foot 2 inches.
1 foot 6 inches × 1 foot 8 inches.
1 foot 10 inches × 2 feet 3 inches.

No. 71.



1 foot 10 inches × 1 foot 8 inches.

Scale, 1½ inch—1 foot.

MACFARLANE'S

FINIALS, CROSSES, BANNERETS, AND WEATHERVANES.

Our attention has often been directed to the unsatisfactory appearance of the gables and pinacles of many of our finest buildings, on account of their unfinished terminations; and with the view of more fully providing for this want, we have spared no expense in producing such a variety of designs as will meet the requirements of most buildings; and hope the designs here illustrated will introduce a better class of goods than has hitherto been available for such purposes.

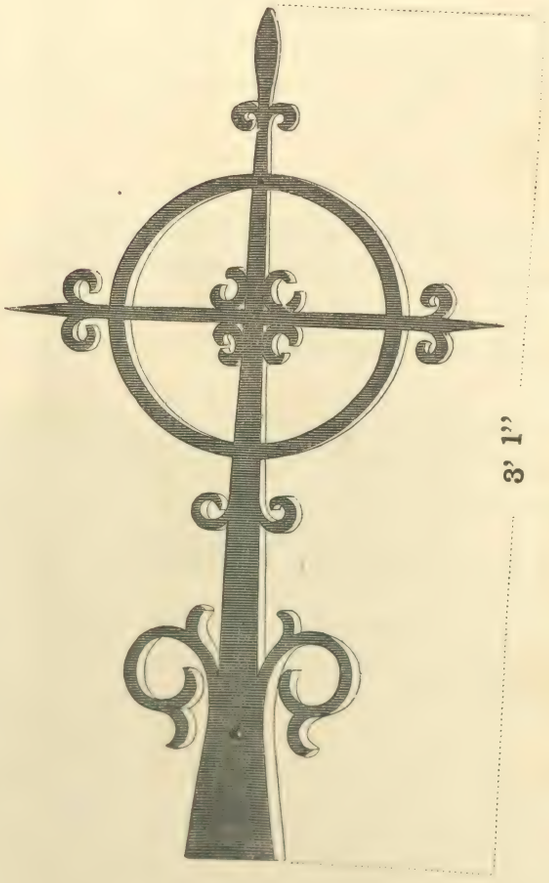
Our FINIALS, CROSSES, BANNERETS, and WEATHERVANES are generally attached to the building by means of batts, or let into the stone, or by screwed bolts going through the parts they are attached to, any of them can be attached to the Ridge-plate or Cresting by a slight alteration of their constructive parts. Many suitable modifications of this kind will suggest themselves on going over these pages.

In order that the various details may be clearly laid down in the Architect's plans, our illustrations are all to a given scale. We have also given several illustrative sheets of drawings, showing various modes of applying our fittings to the building, see pages 25, 37, 38, 104, 112, and frontispiece.

Architect's schedules should distinctly specify the No. and Size, along with any other necessary detail.

In ordering the goods, our customers should always state the No. and Size, also the mode of fixing them. On giving us the exact measurements we can furnish them accordingly, all ready for fitting up.

No. 1.

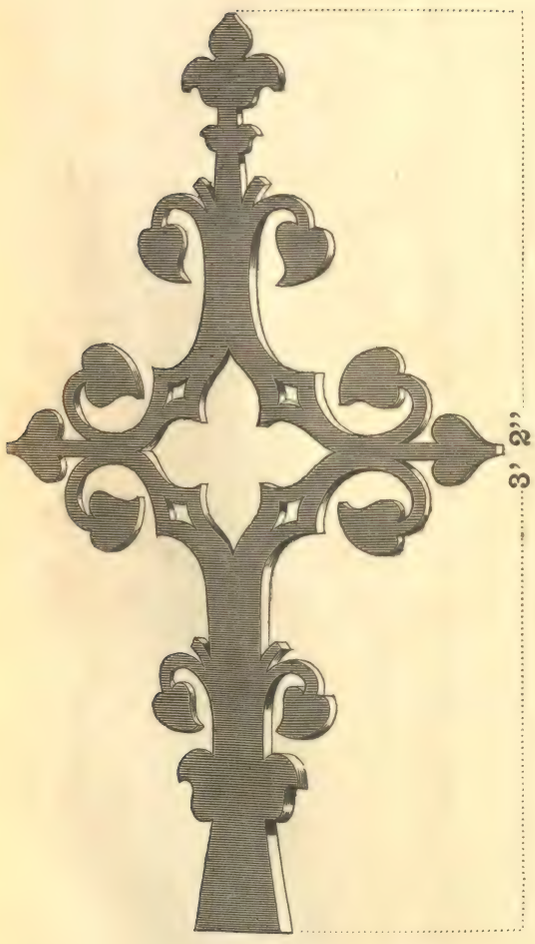


No. 2.

Scale, 1½ inch—1 foot.

No. 4.

No. 3.



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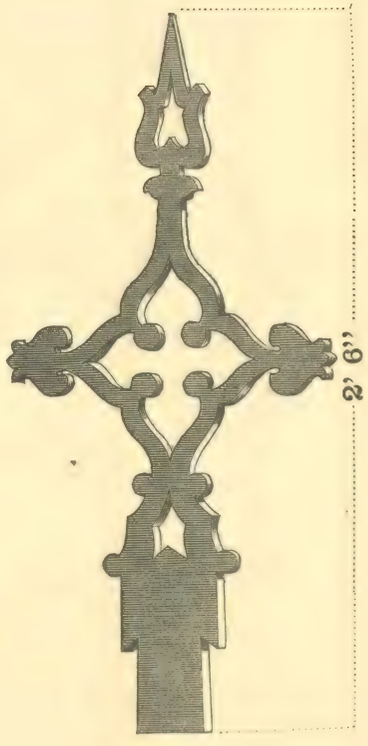

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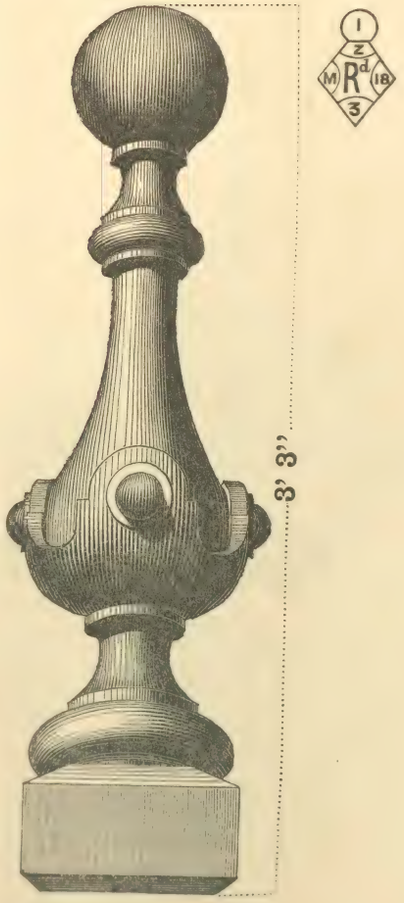

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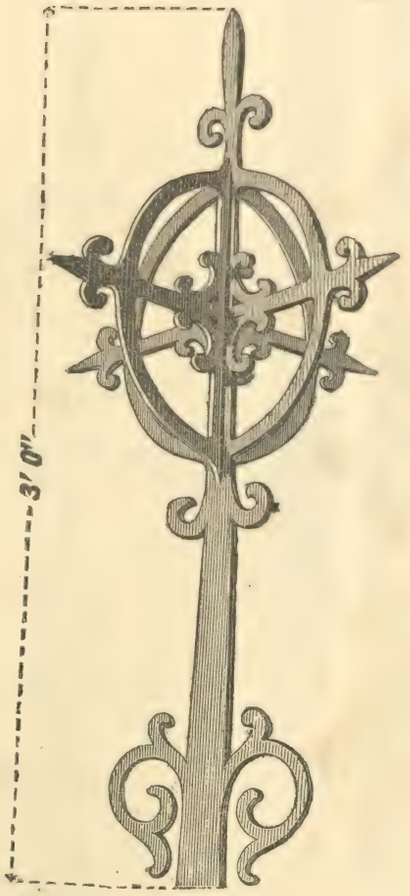

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Scale, 1½ inch—1 foot.

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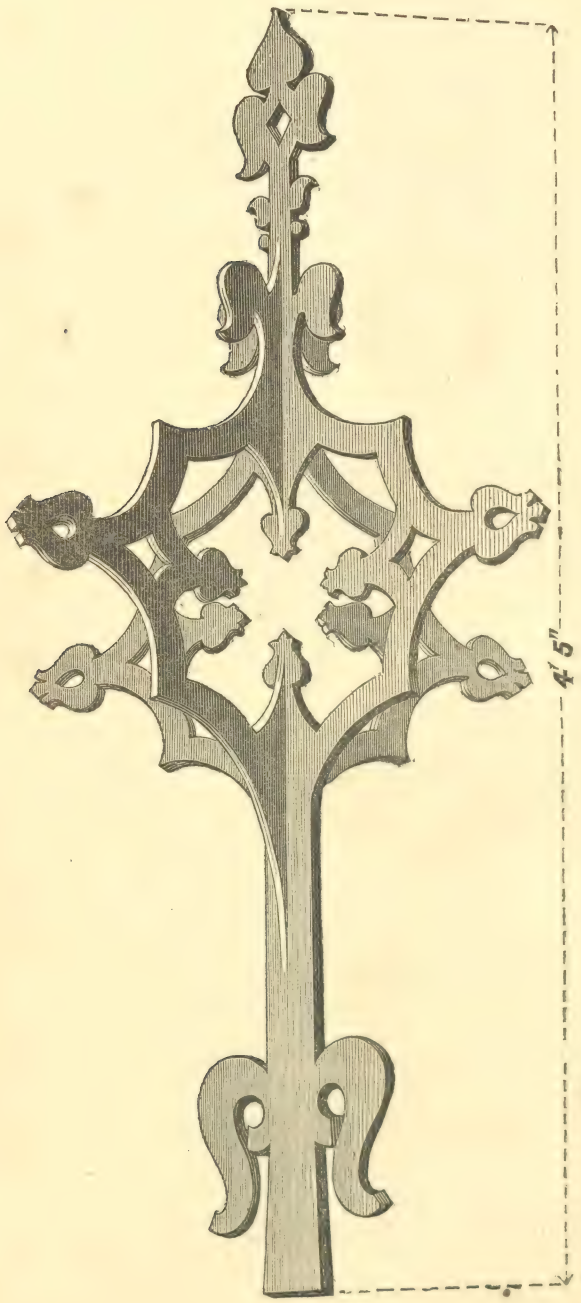

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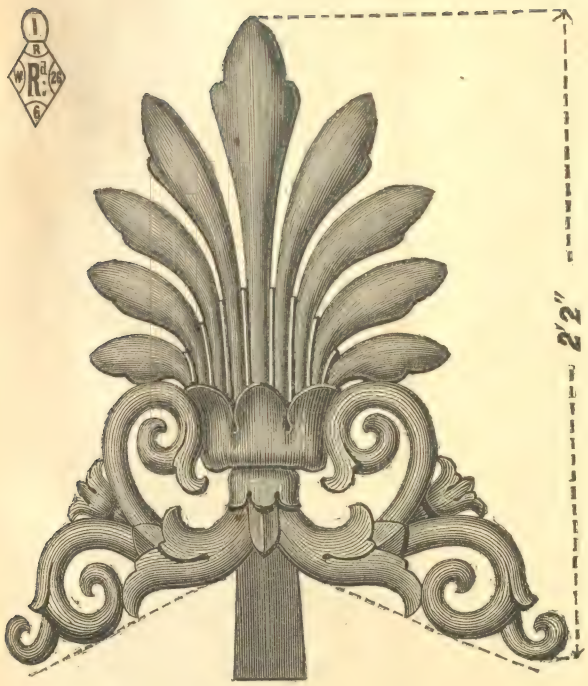

Scale, 1½ inch—1 foot.

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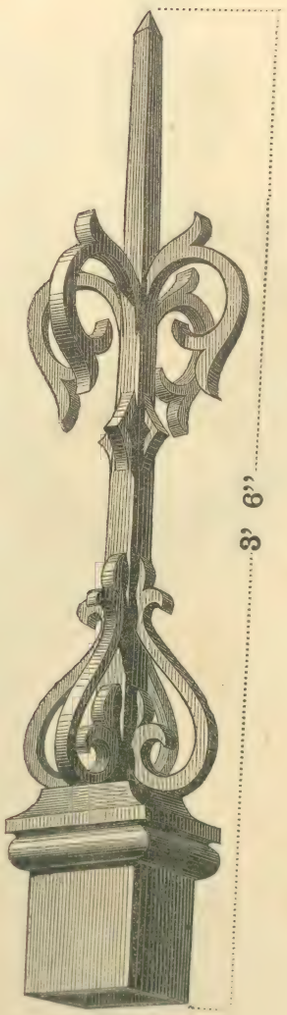

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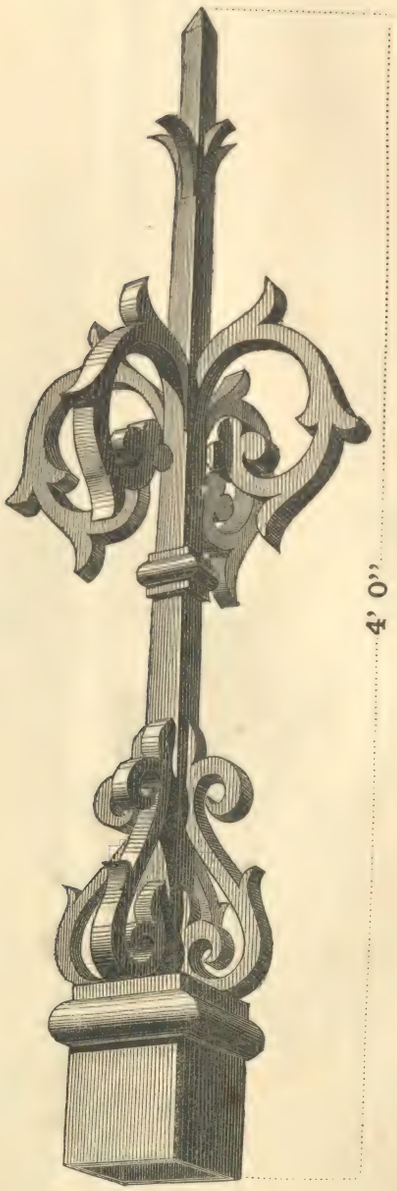

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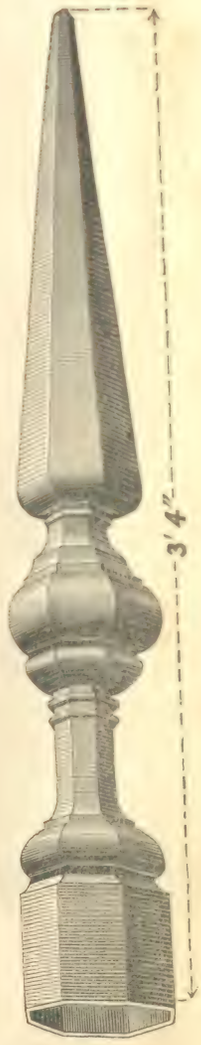

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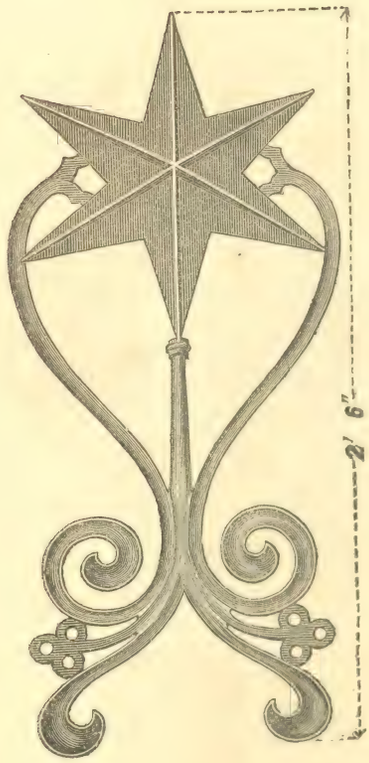

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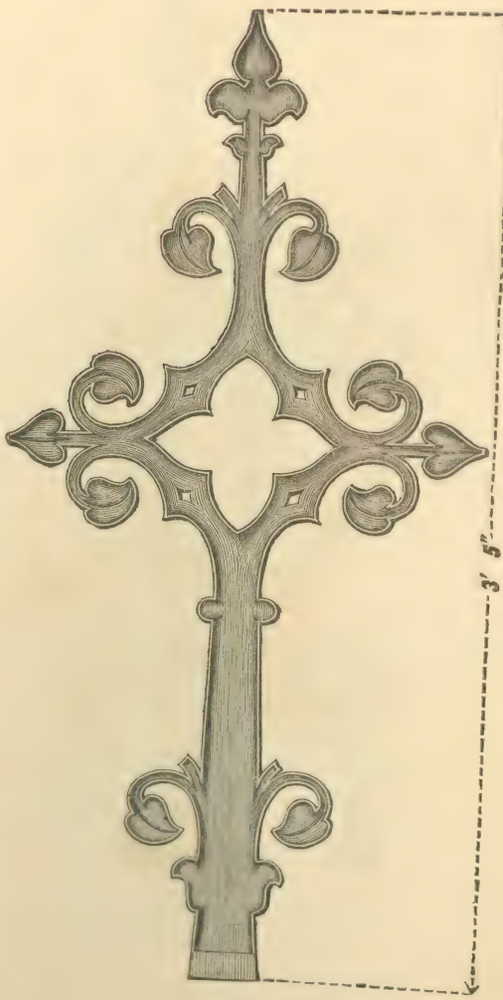

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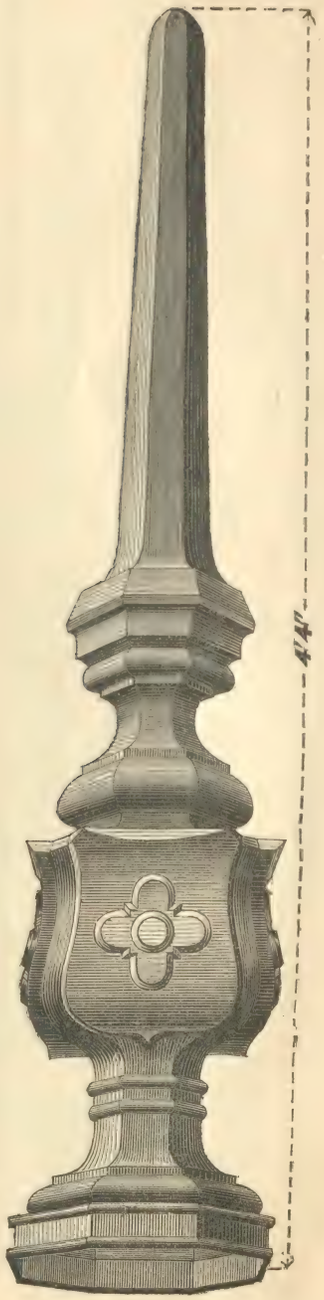

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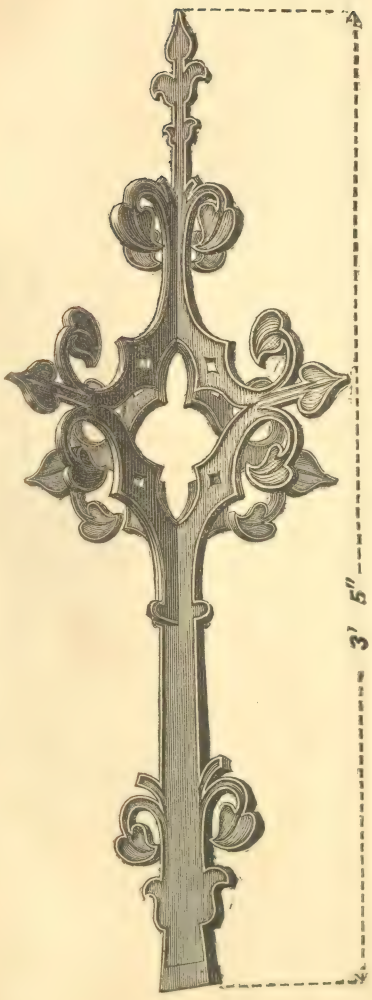
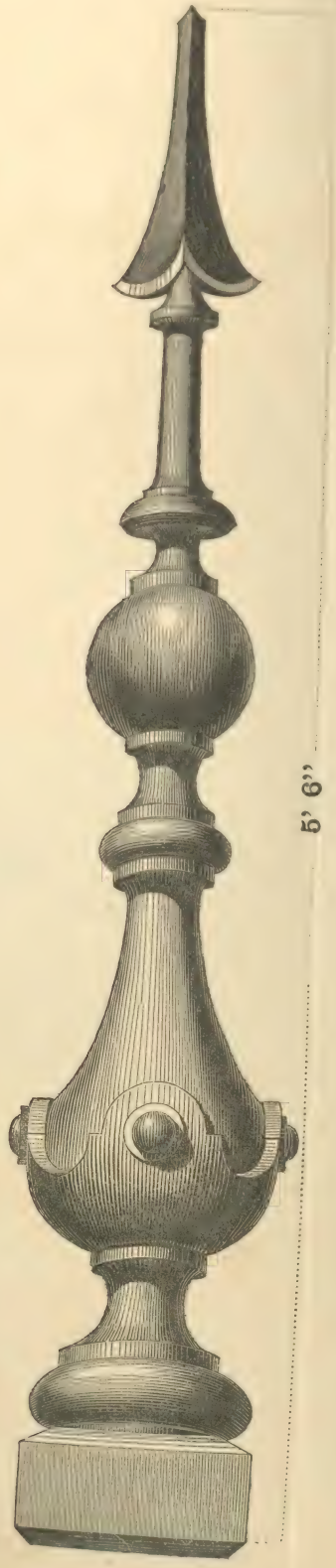


No. 17.

Scale, 1½ inch—1 foot.

No. 18.

No. 19.



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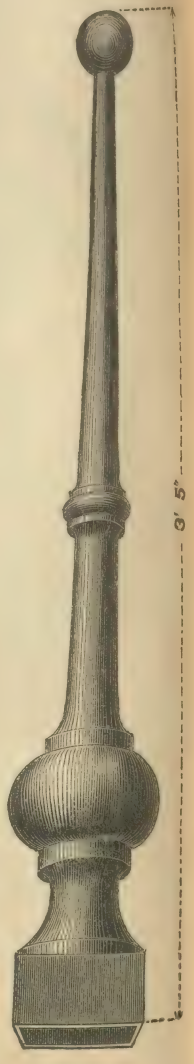
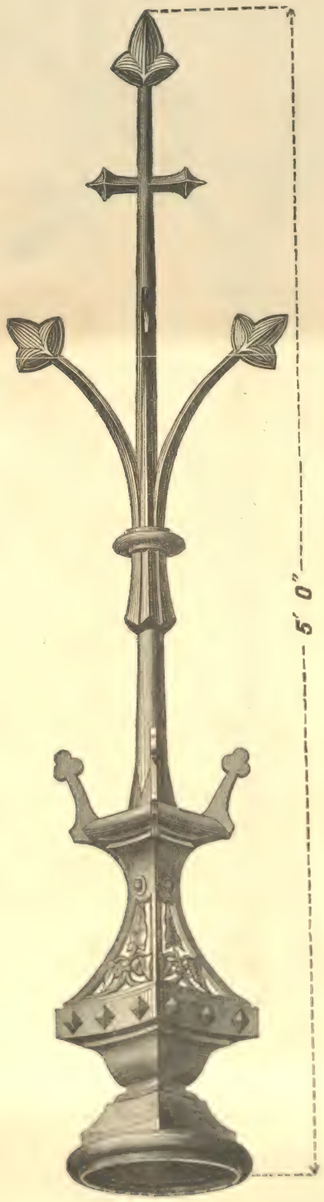


Scale, 1½ inch—1 foot.

MACFARLANE'S FINIALS.

No. 21.

No. 21.



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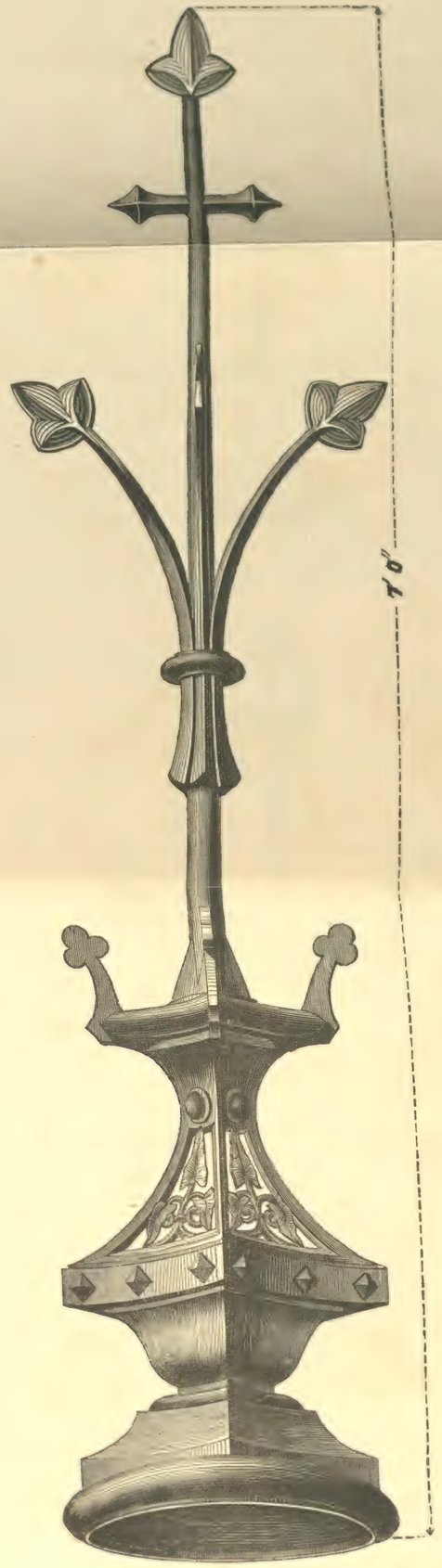

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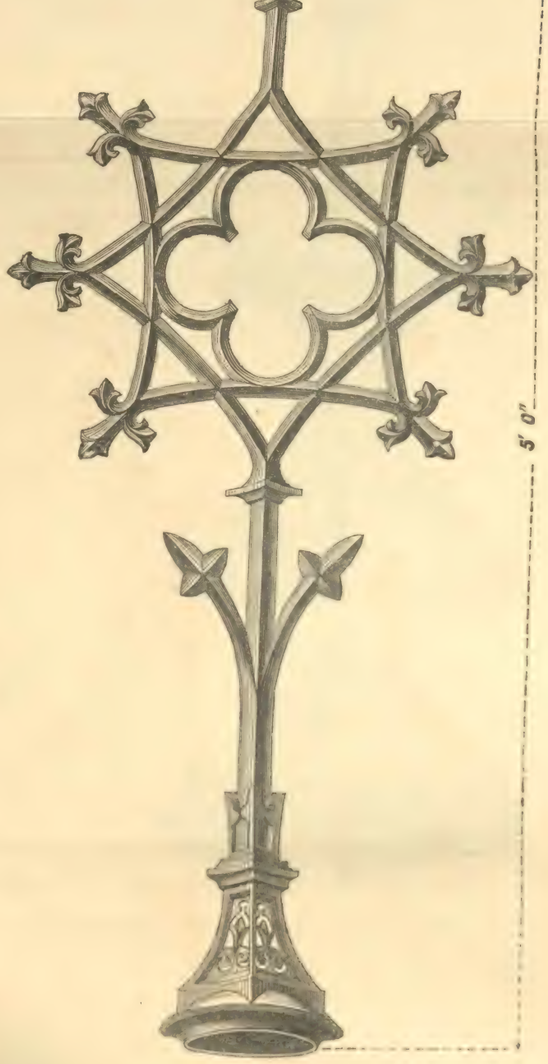
No. 22.

No. 22.



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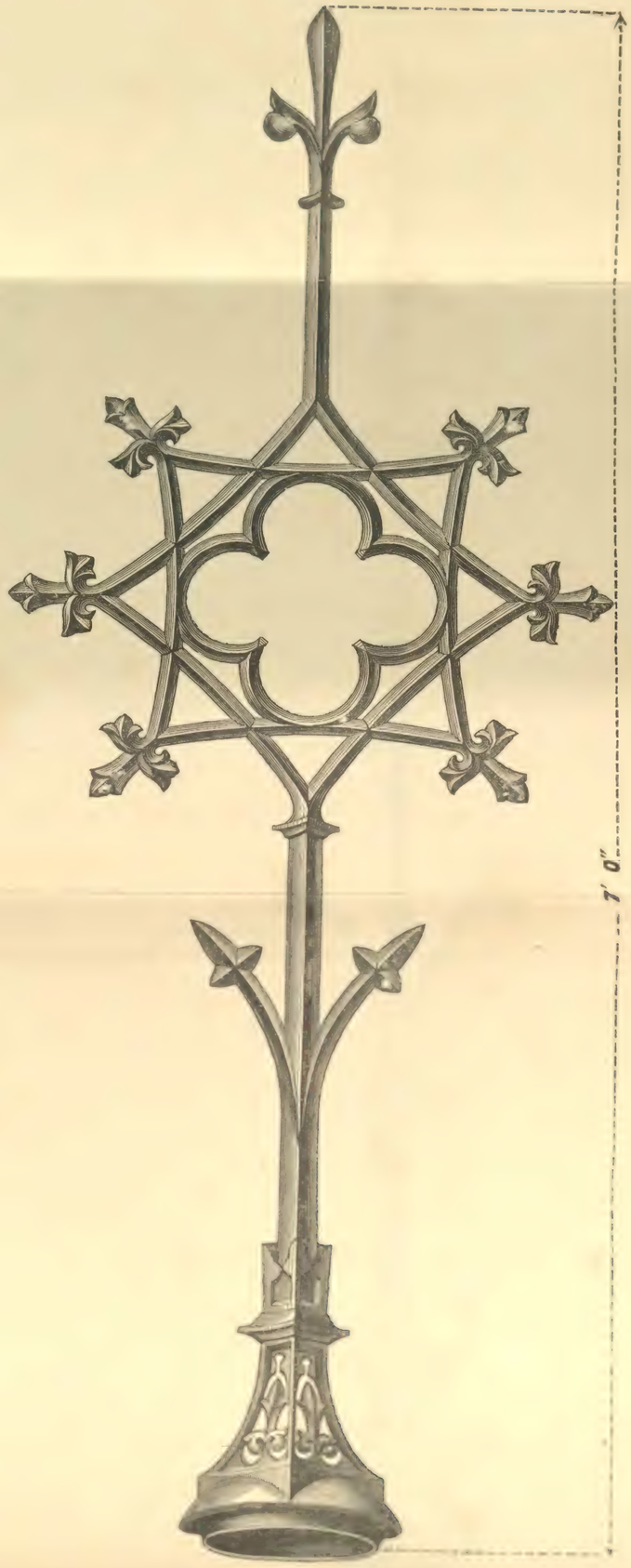
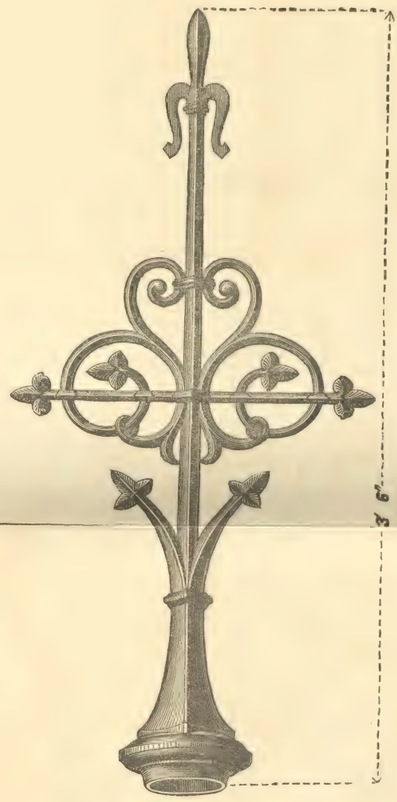


Scale, 1½ inch—1 foot.

MACFARLANE'S FINIALS.

No. 23.



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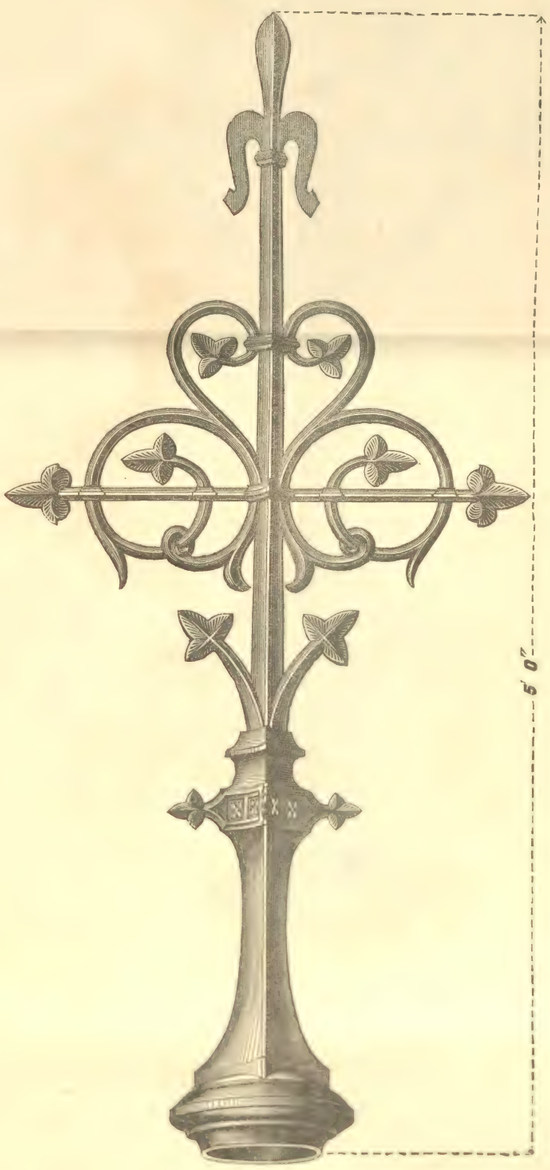

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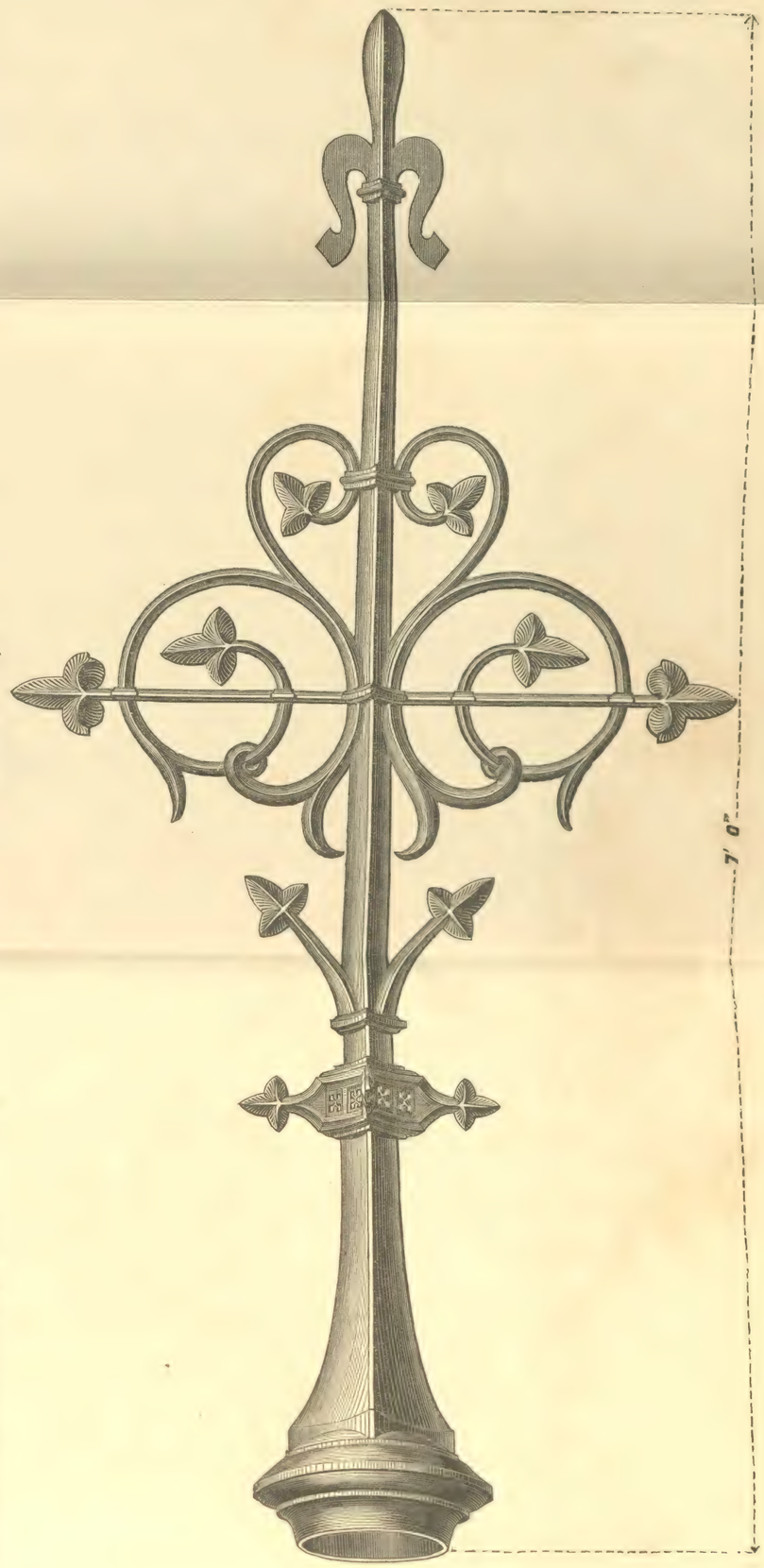

Scale, 1½ inch—1 foot

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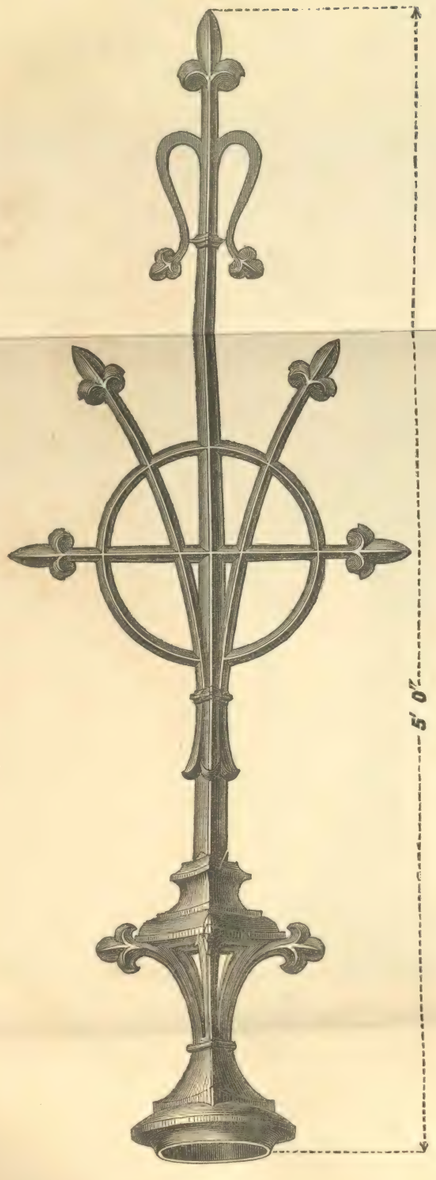
No. 24.



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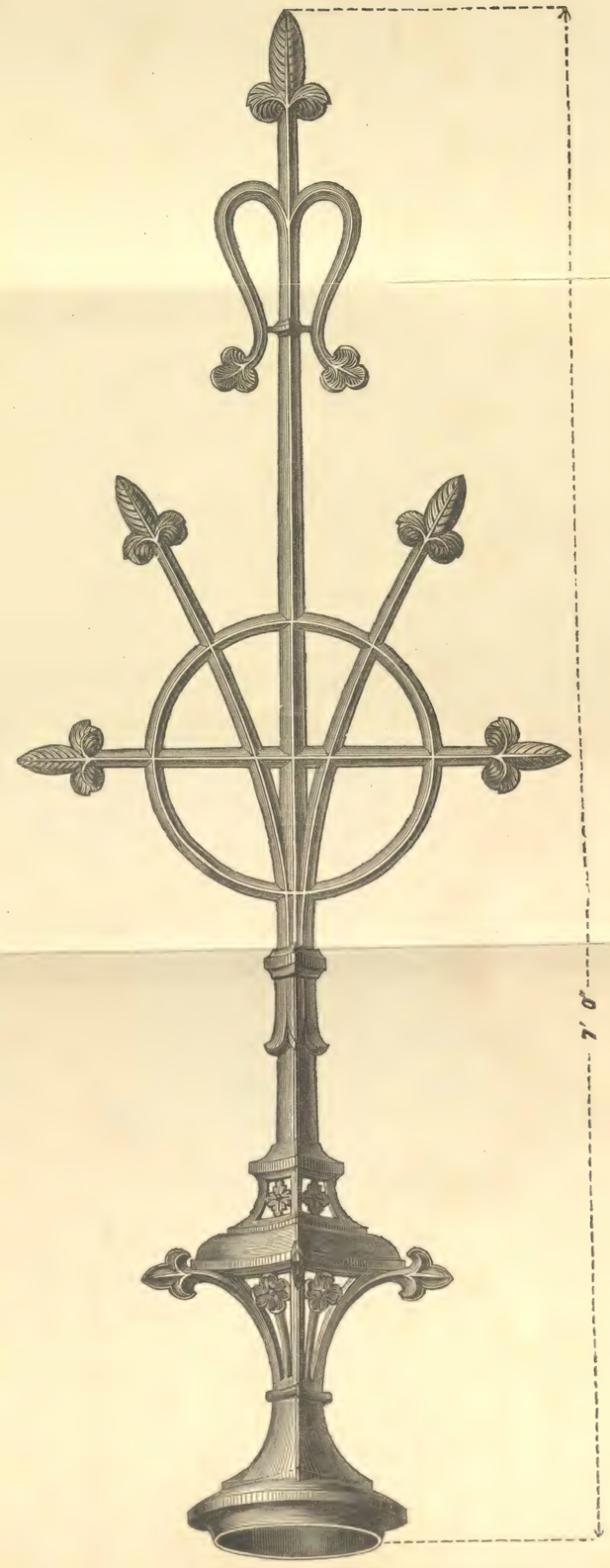

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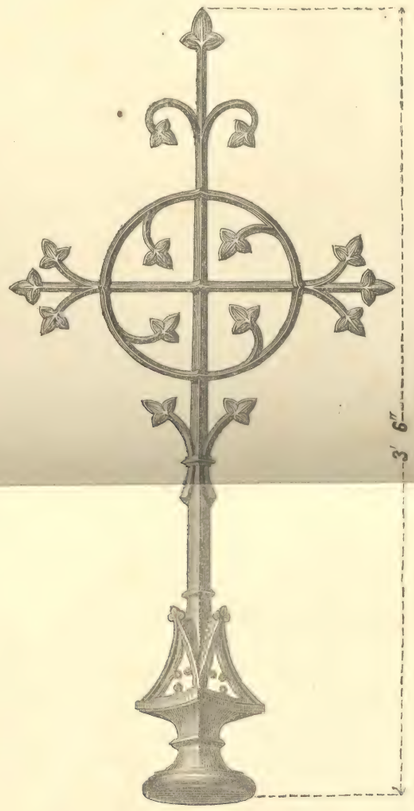
MACFARLANE'S FINIALS.

No. 25.



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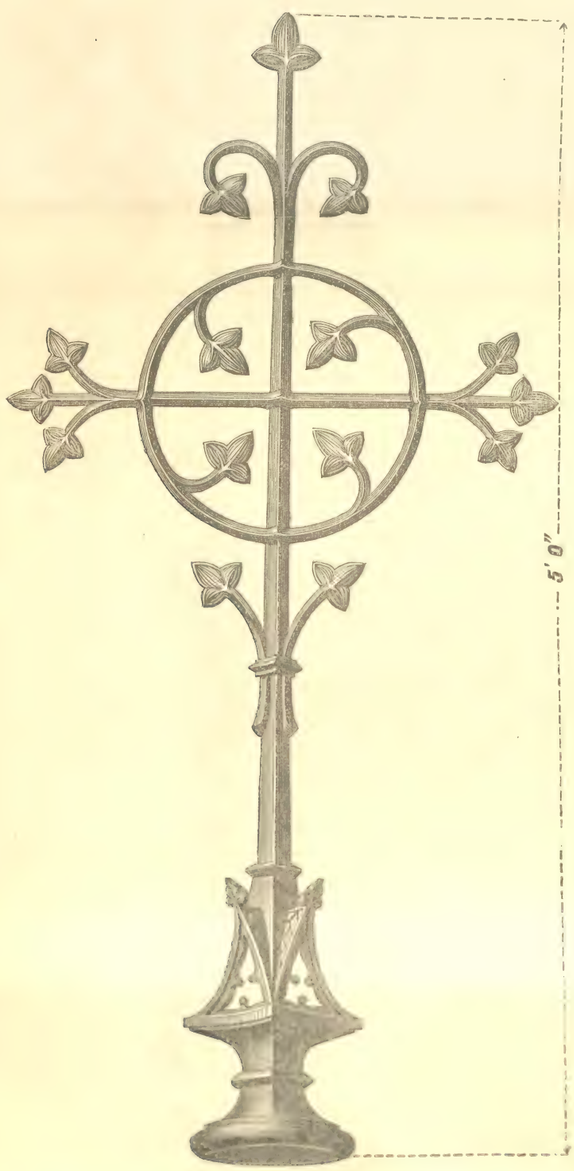

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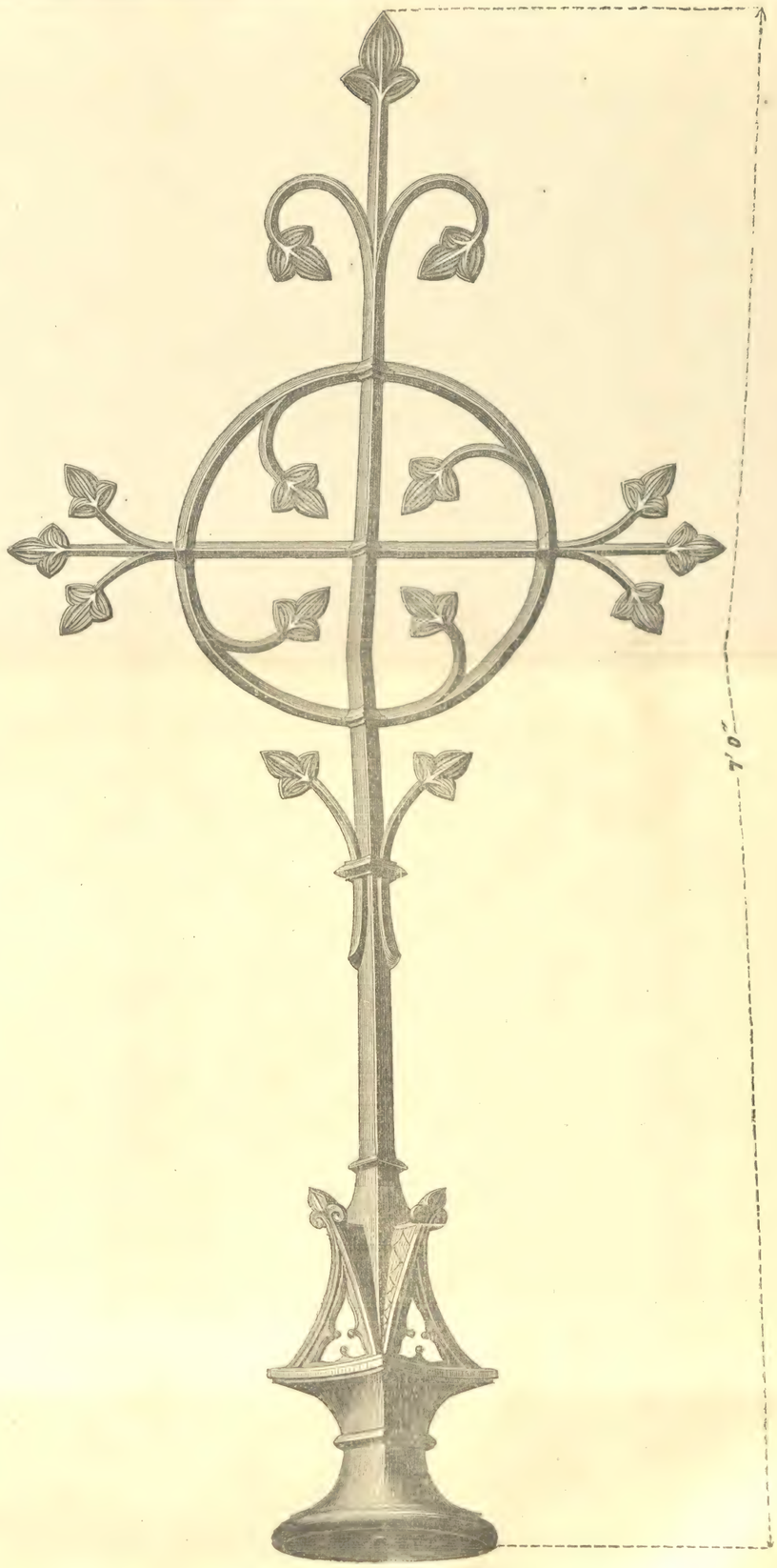

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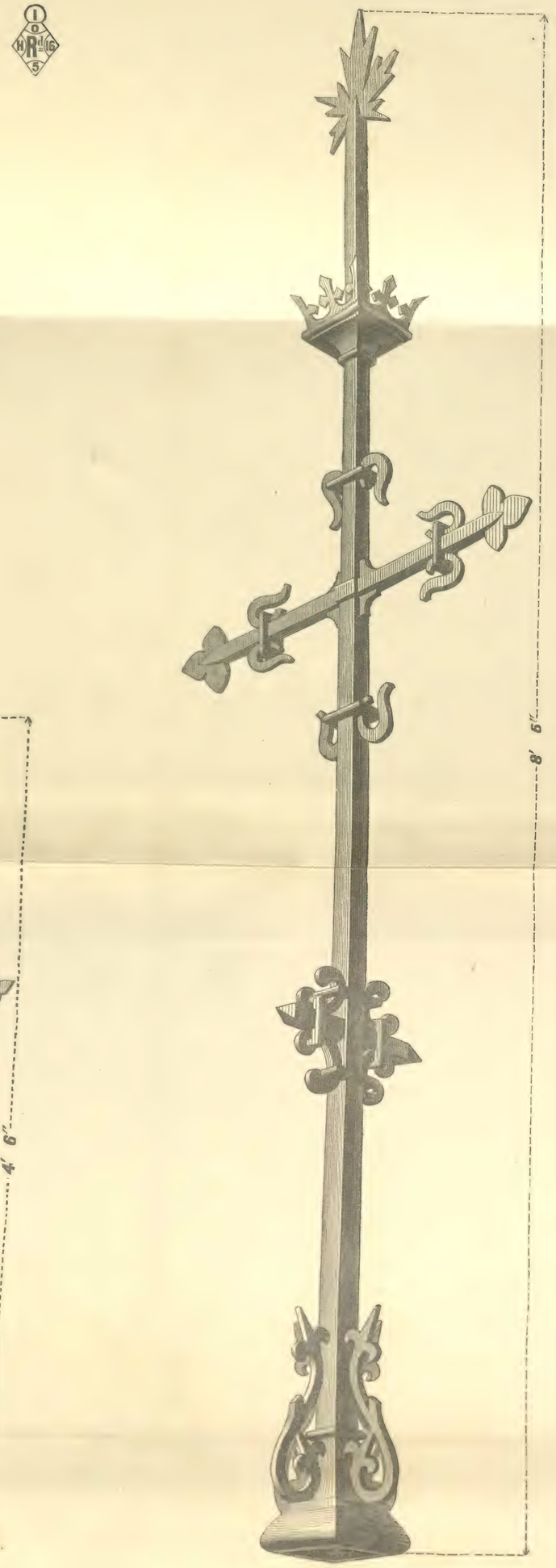

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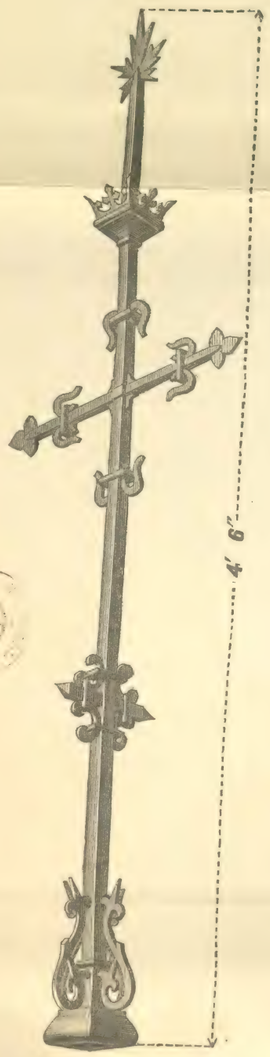

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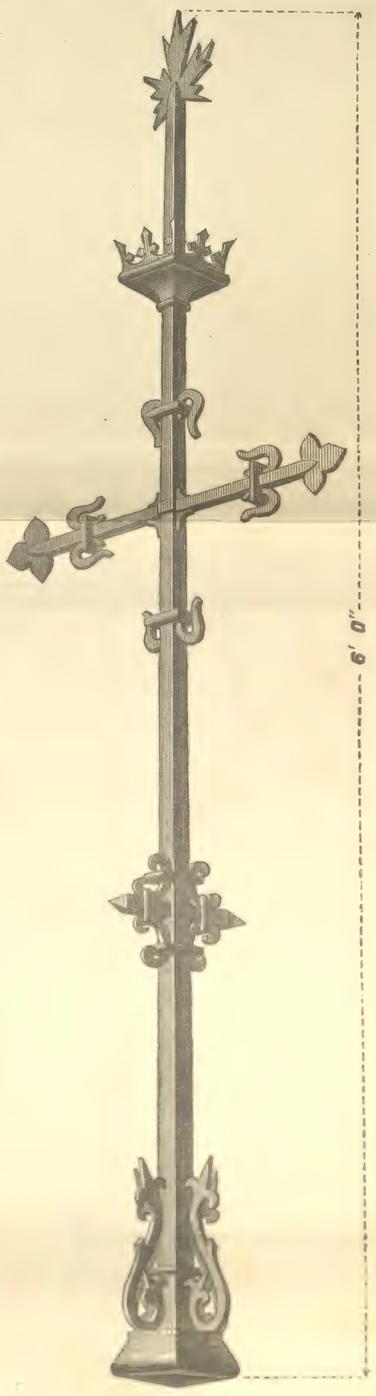
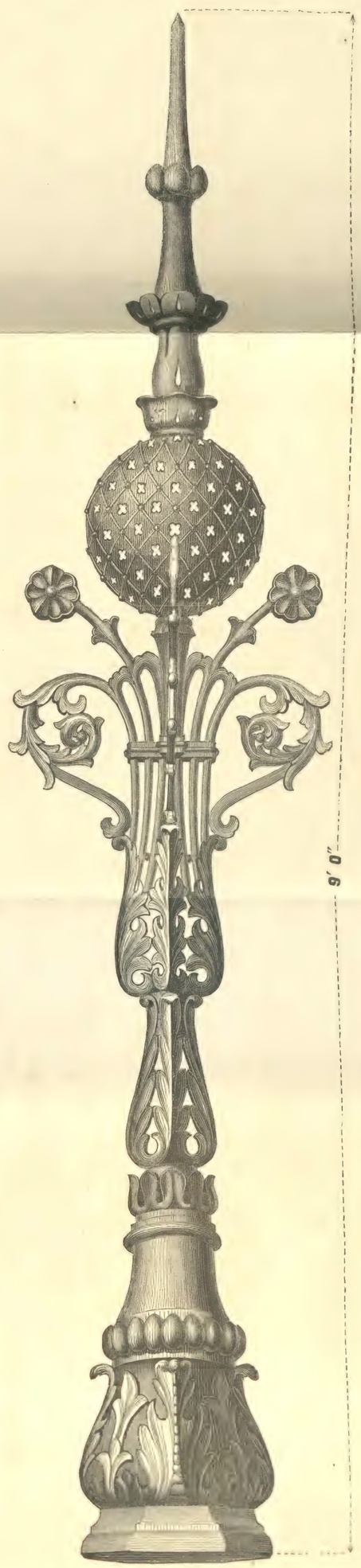


Scale, 1½ inch—1 foot.

MACFARLANE'S FINIALS.

No. 27.



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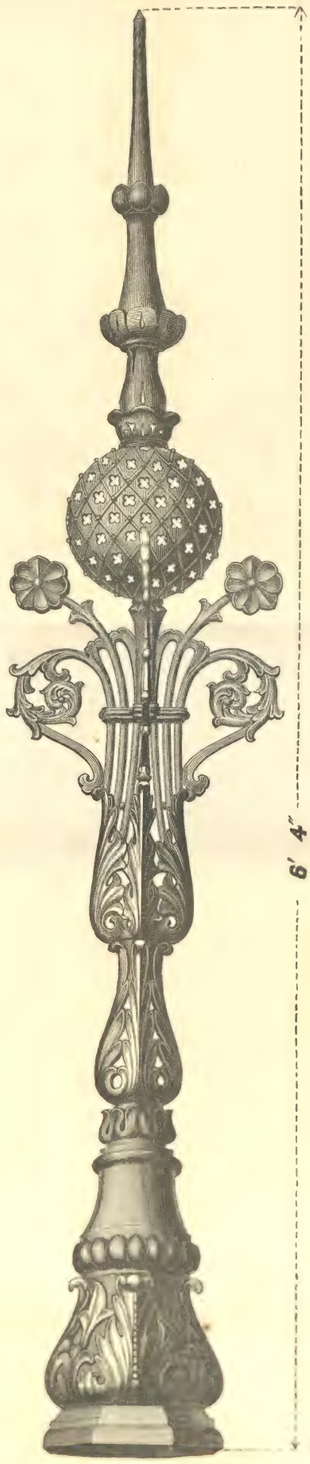

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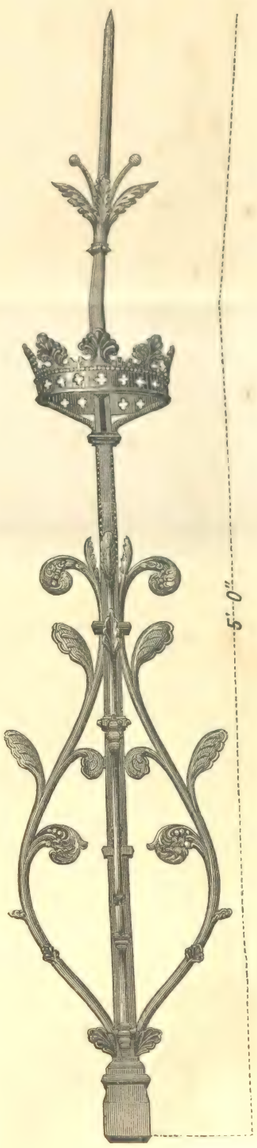

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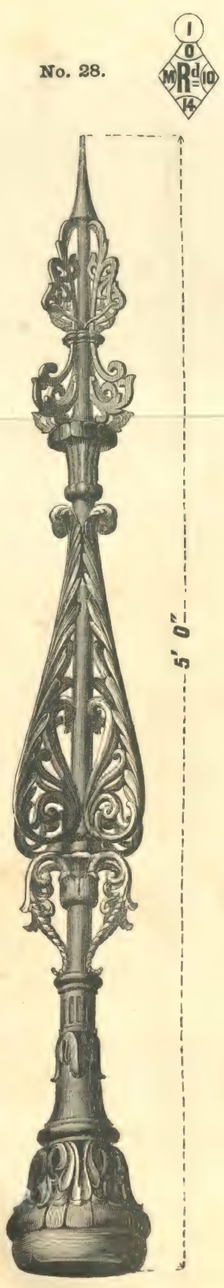

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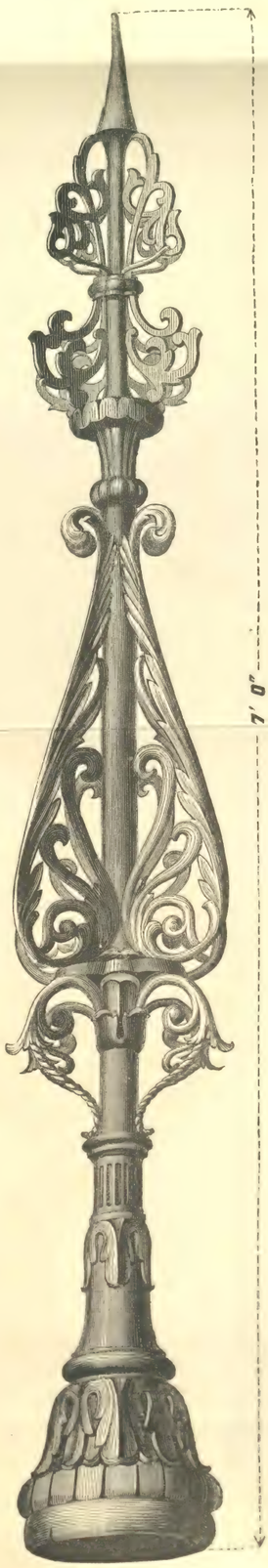

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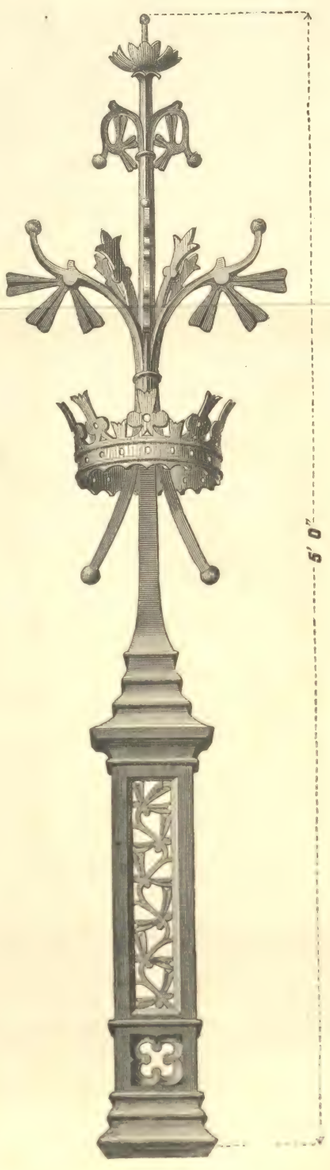

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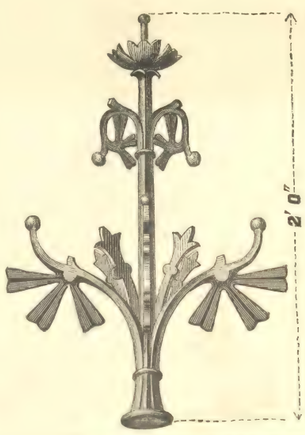
No. 31.



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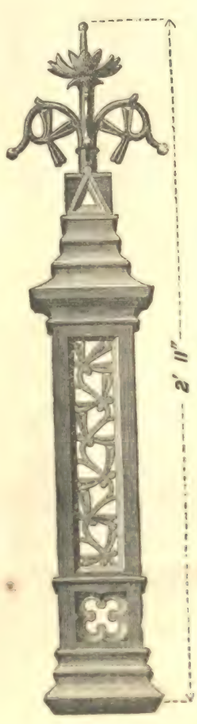
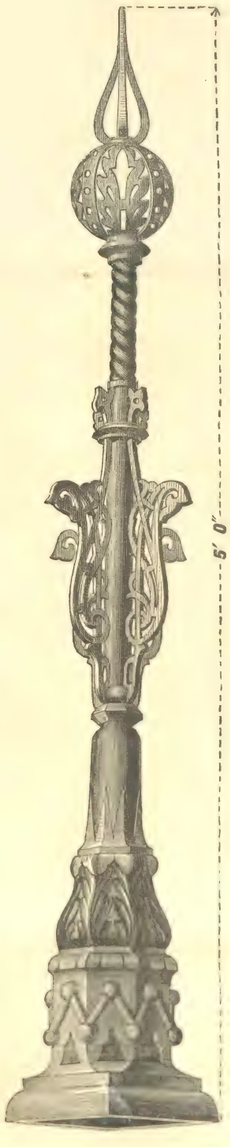


Scale, 1½ inch—1 foot.

MACFARLANE'S FINIALS.

No. 29.

No. 29.



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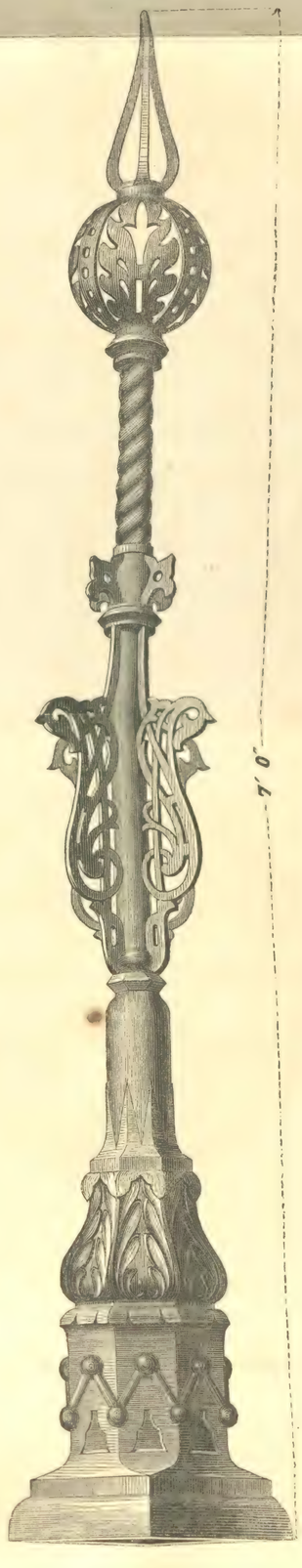
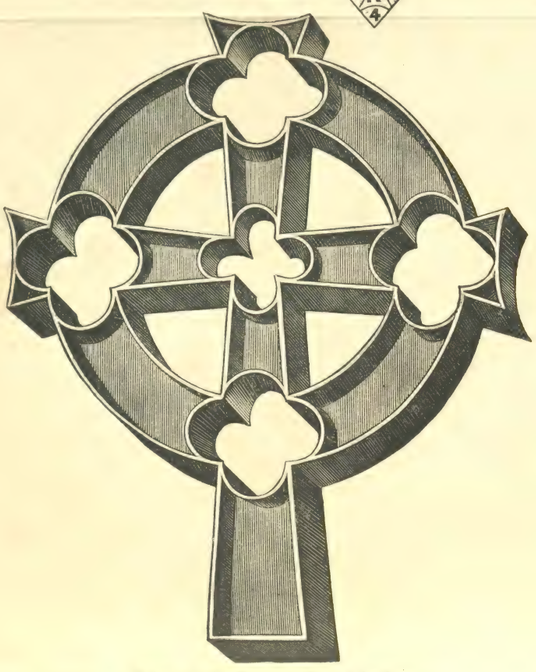


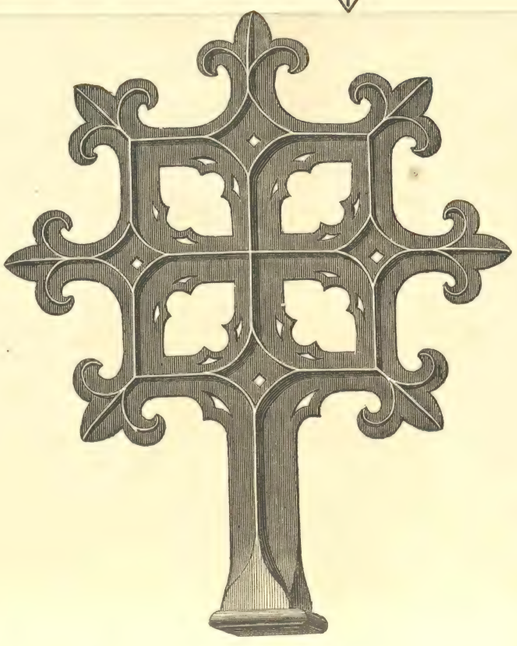
Scale, 1½ inch—1 foot.

No. 37.



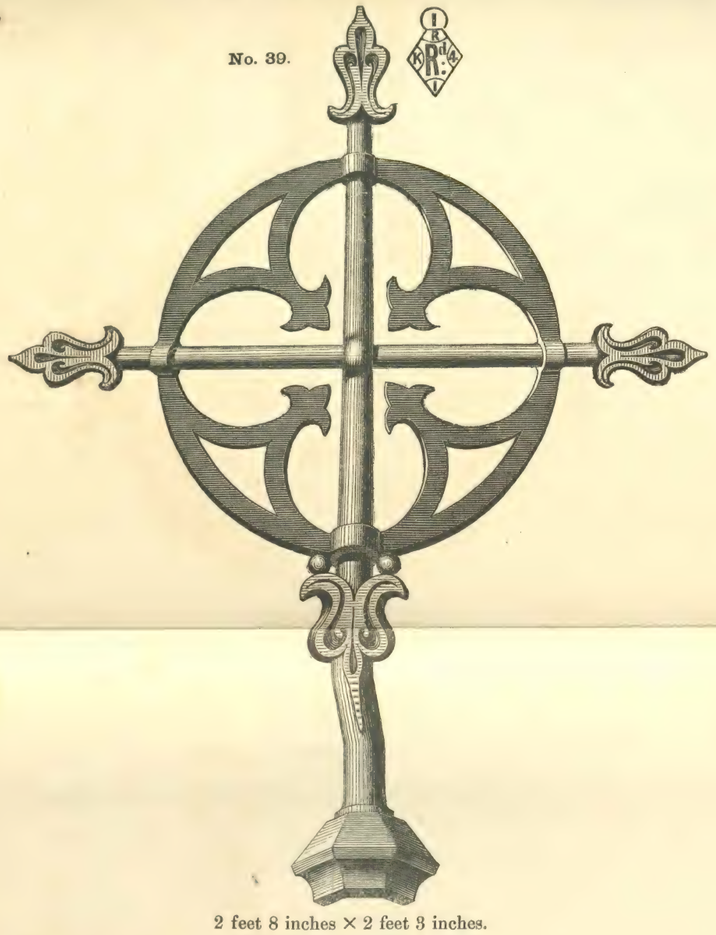
2 feet 0 inches × 1 foot 7 inches.
2 feet 10 inches × 2 feet 3 inches.

No. 38.



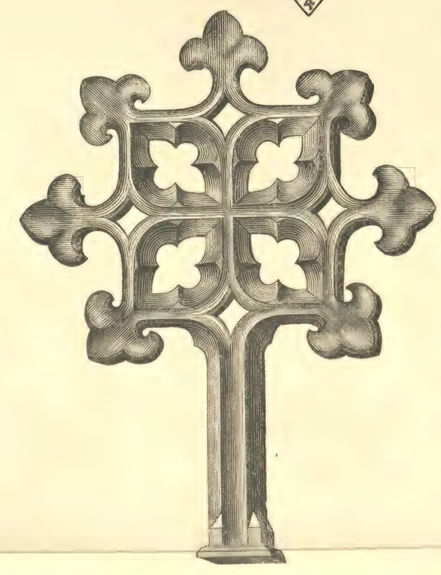
2 feet 0 inches × 1 foot 7 inches.
2 feet 9 inches × 2 feet 3 inches.

No. 39.



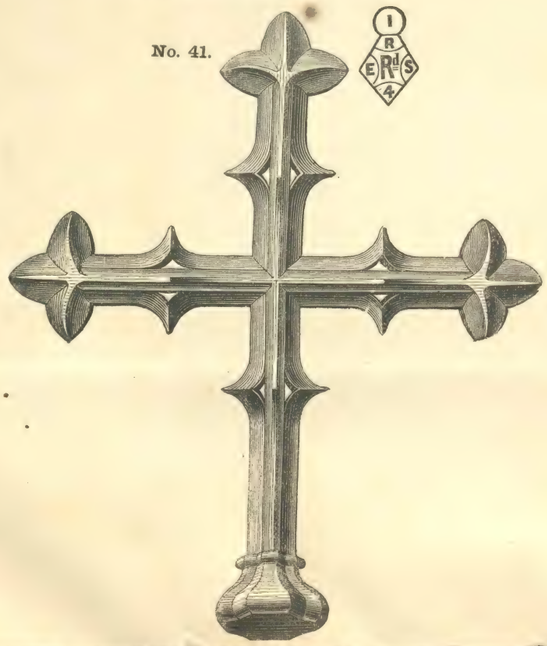
2 feet 8 inches × 2 feet 3 inches.
3 feet 9 inches × 3 feet 2 inches.

No. 40.



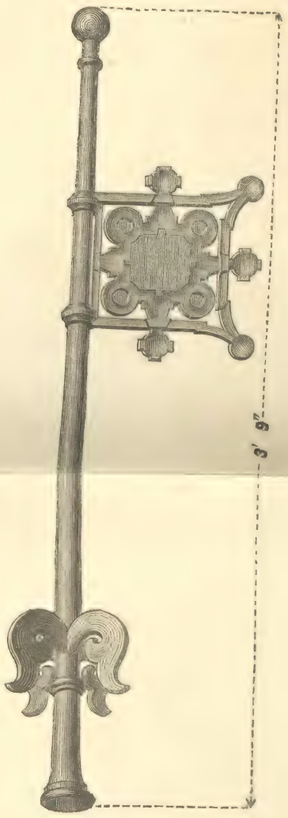
2 feet 4 inches × 1 foot 10 inches.

No. 41.



No. 42.

No. 48.



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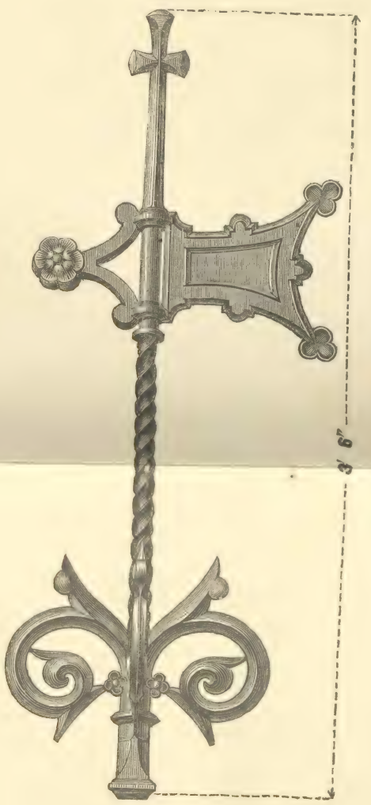

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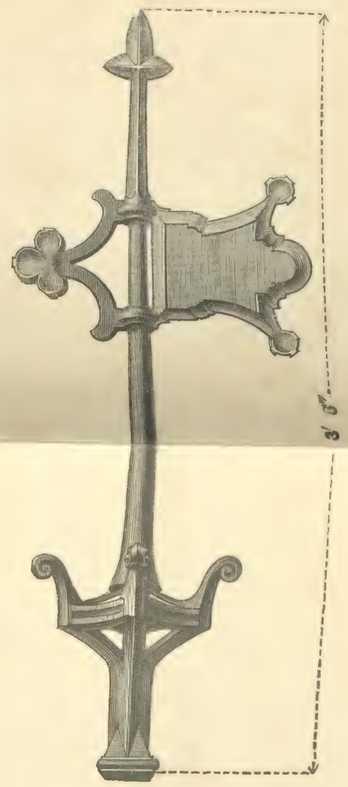

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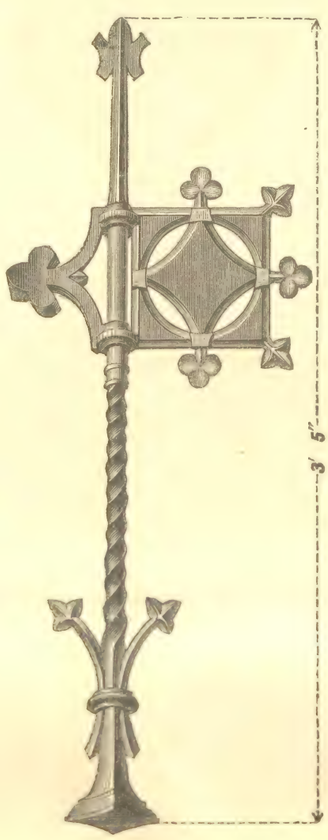

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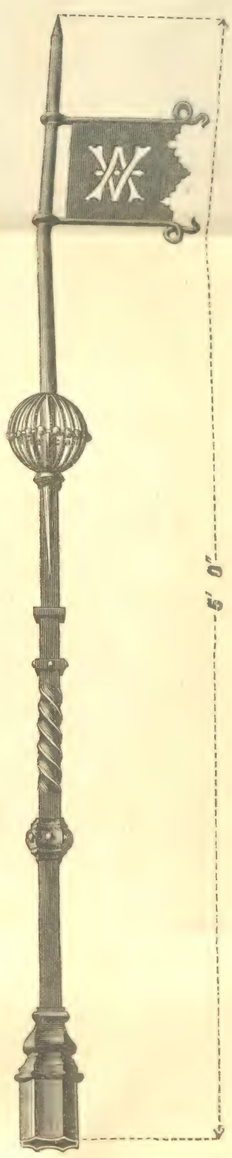

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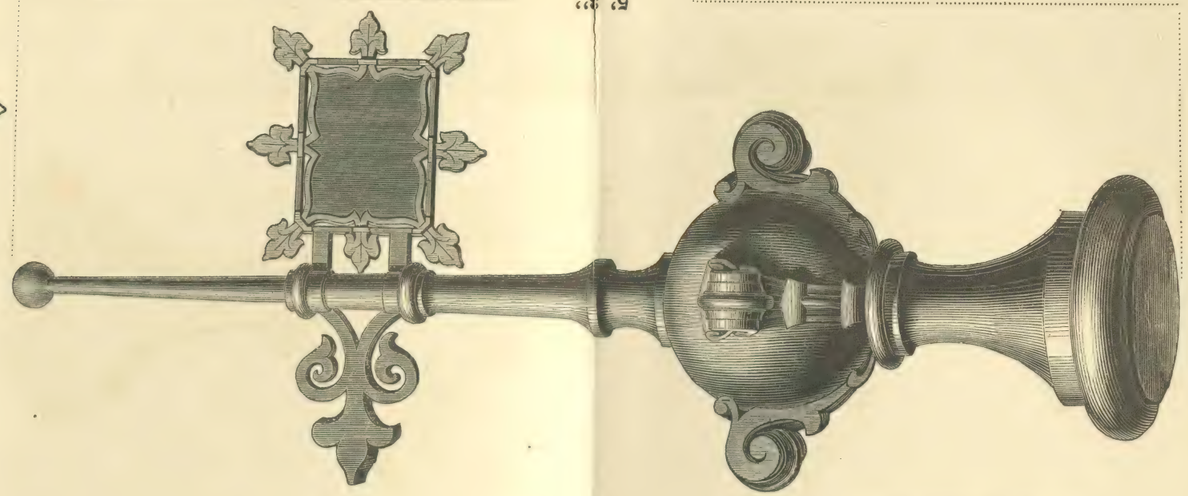

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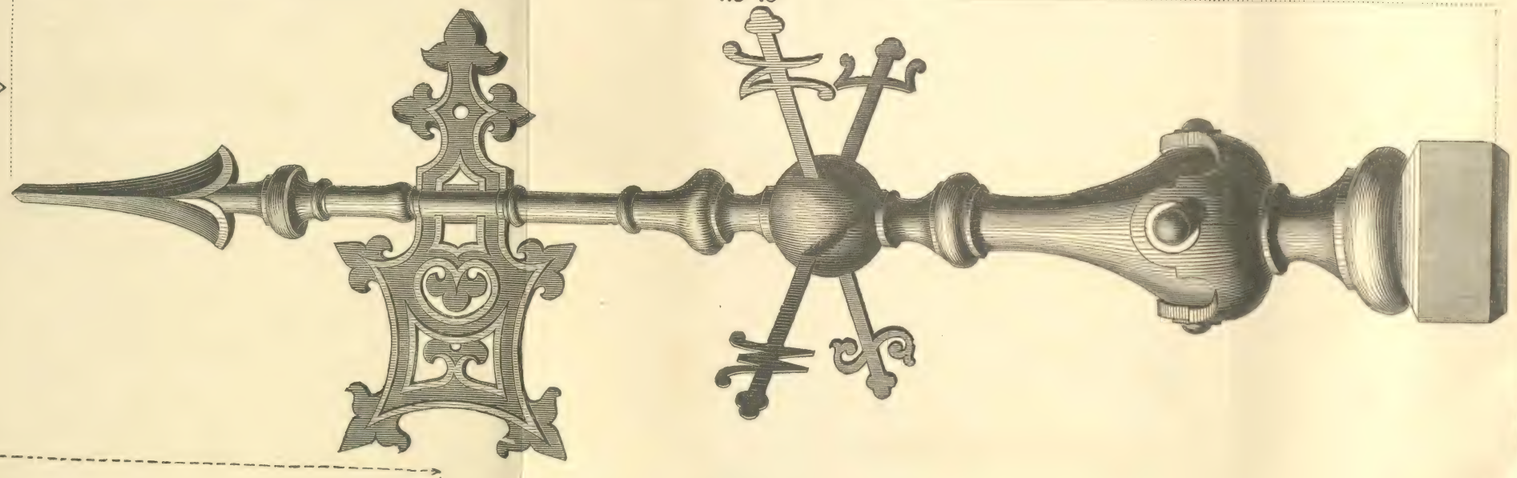

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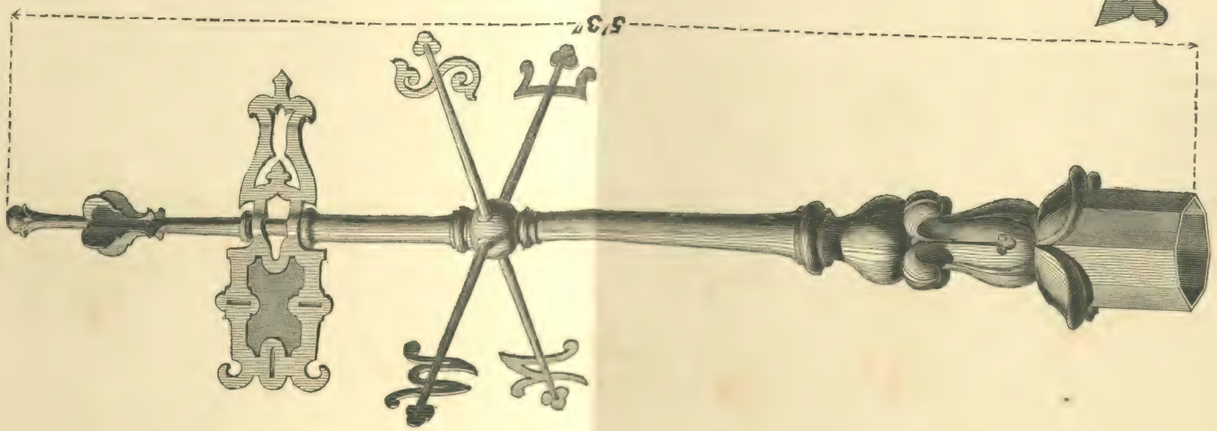
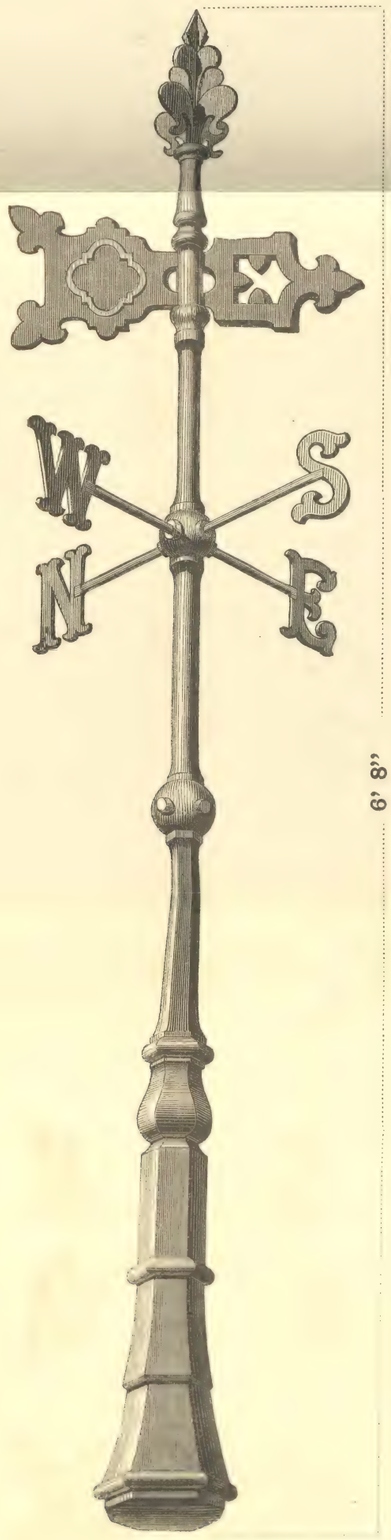
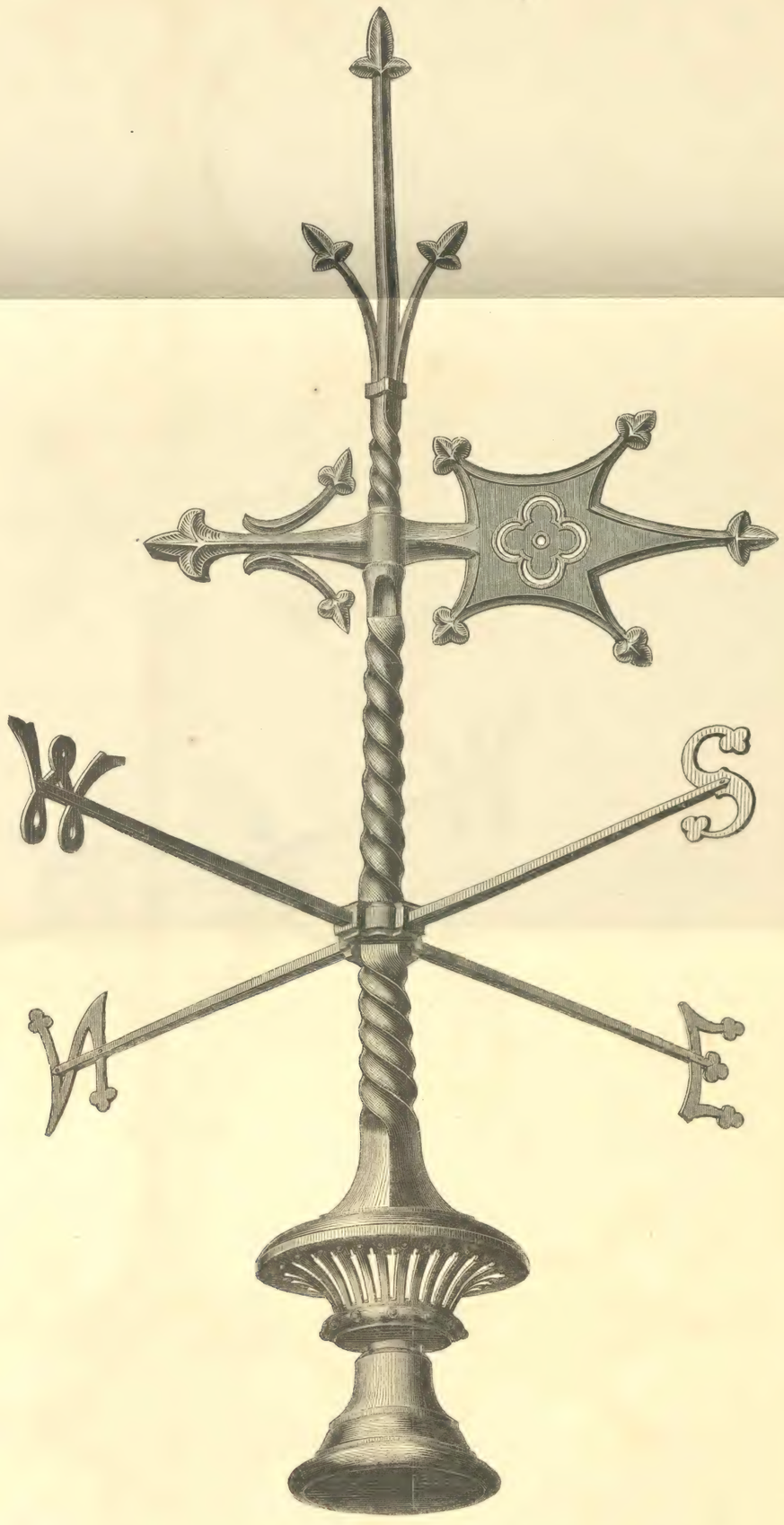


No. 60.



No. 61.

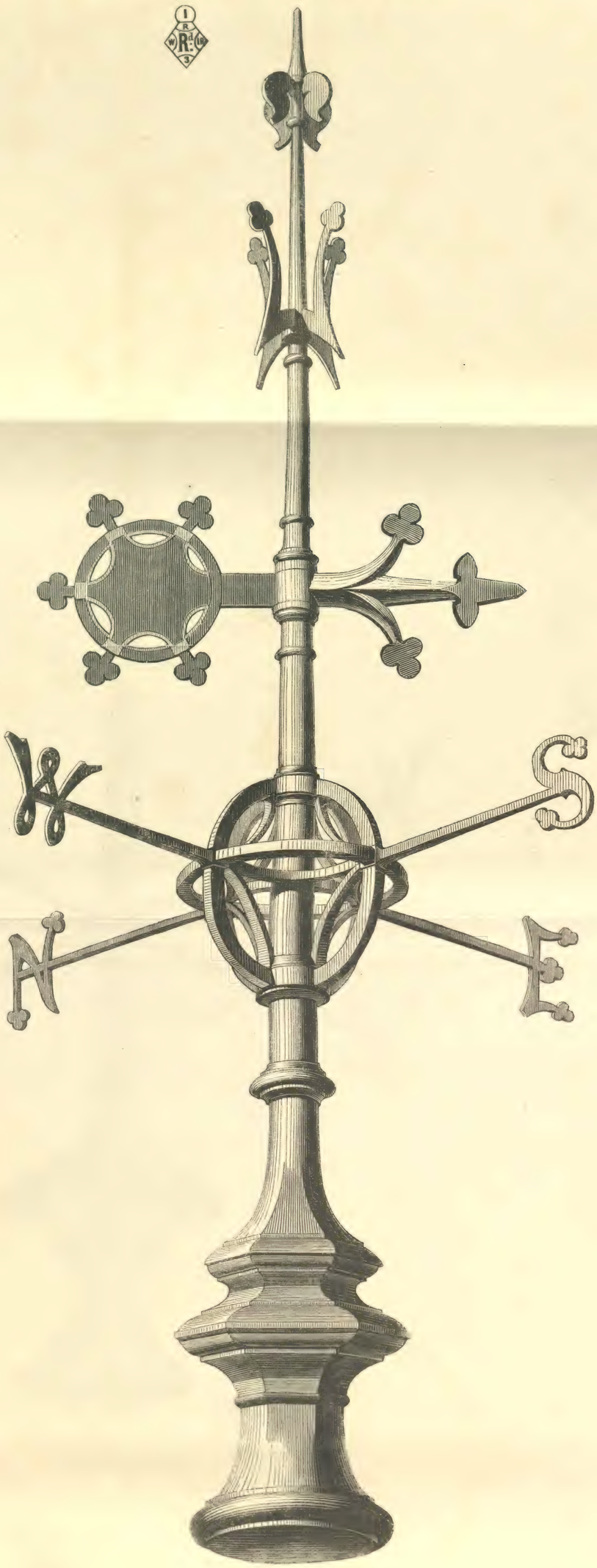


7 feet 6 inches high.
9 " 9 " " "
12 " 0 " " "

Scale, 1½ inch—1 foot.

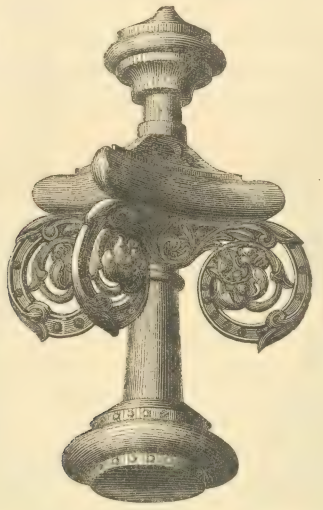
MACFARLANE'S

No. 62 WEATHERVANE.



7 feet 6 inches high.
9 " 9 " "
12 " 0 " "

No. 32 FINIAL.

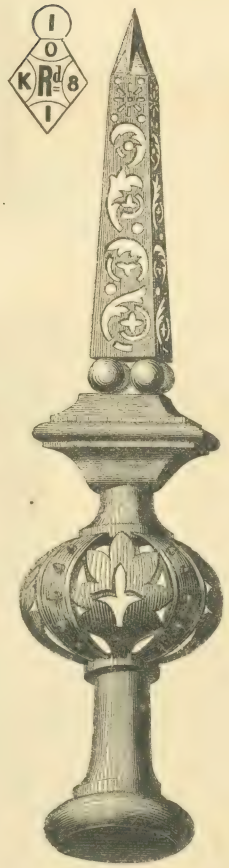


1 foot 8 inches high.
2 " 6 " "

No. 43 CROSS.

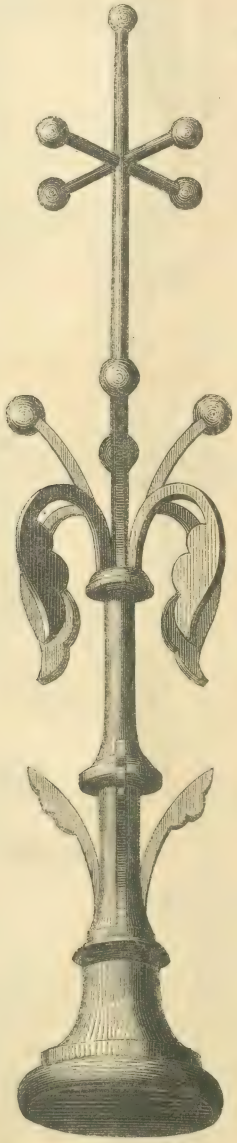
3 feet 1 inch × 1 foot 8 inches.
4 " 0 " ×2 " 3 "

No. 33 FINIAL



3, 5, and 7 feet high.

No. 34 FINIAL.



4, 6, and 9 feet high.

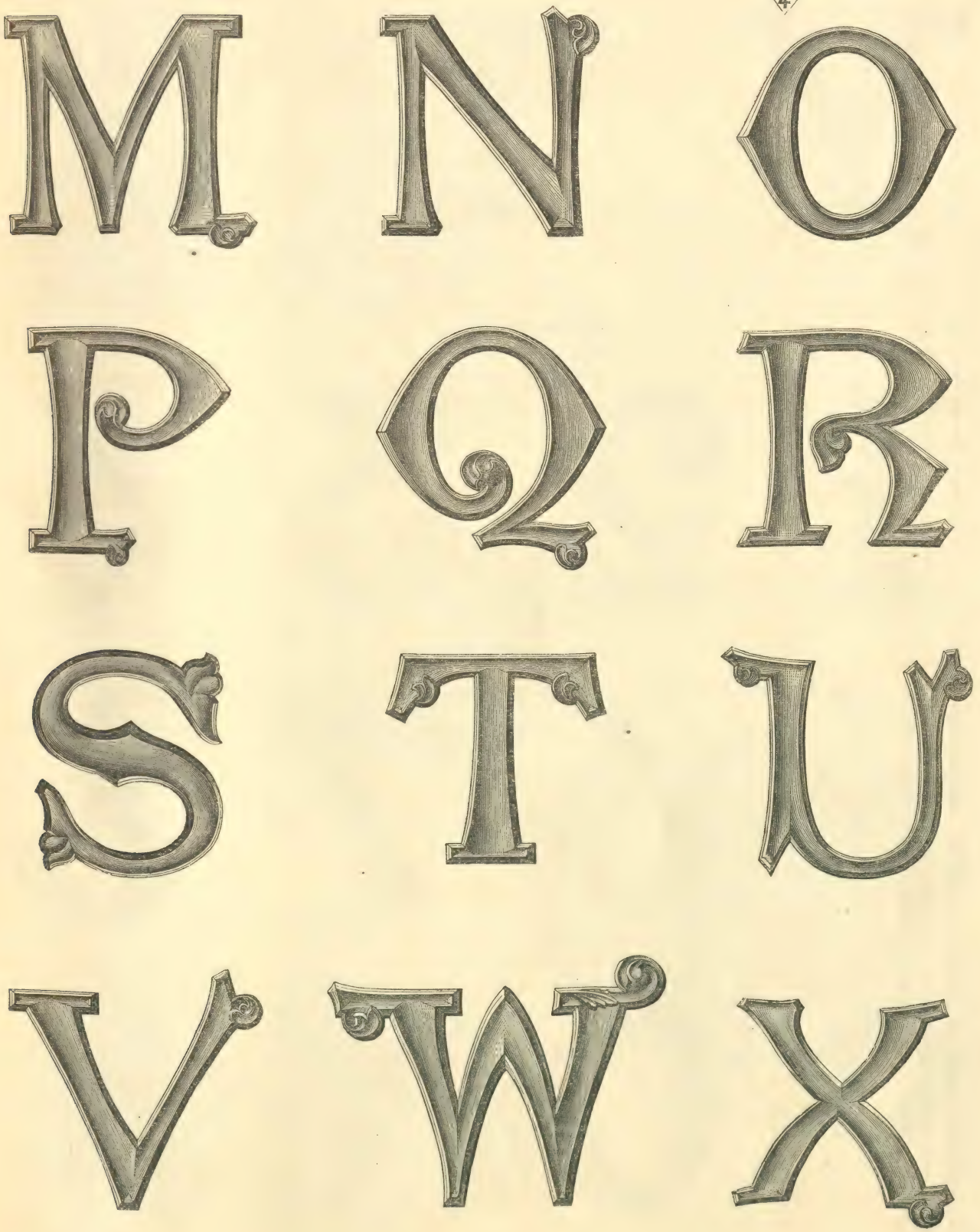
Scale, 1½ inch—1 foot.

In this important class of goods it has been our aim to adhere pretty closely to the well-known features of the Roman alphabet. The art feeling we have endeavoured to realize gives a marked character to each letter, without impairing its distinct expression.

Our Sign Alphabet and Numerals may be used in connection with wood, stone, or other materials, and for the following, amongst other purposes—Sign boards, door numbers, pew numbers, &c. They can be had of the following sizes—2, 2½, 3, 4, 5½, 7, 9, 12, 16, 20, and 24 inches. *Other sizes to order.*

SIGN ALPHABET.

Scale, 1½ inch—1 foot.



Scale, 1½ inch—1 foot.

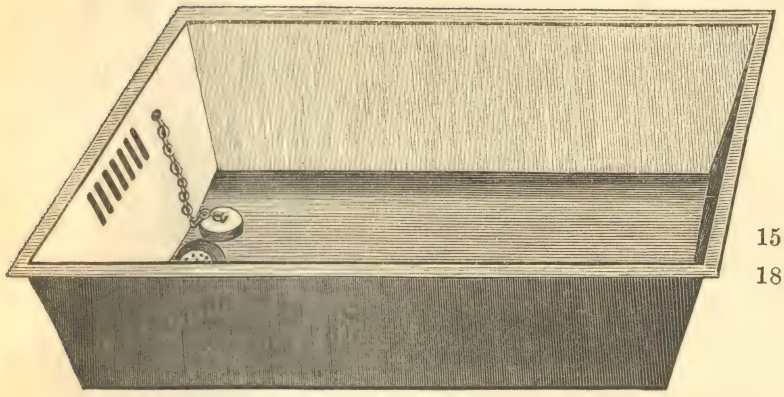
SIGN NUMERALS.

COMMA.

PERIOD.

Scale, 1½ inch—1 foot.

PLUMBERS' CASTINGS.



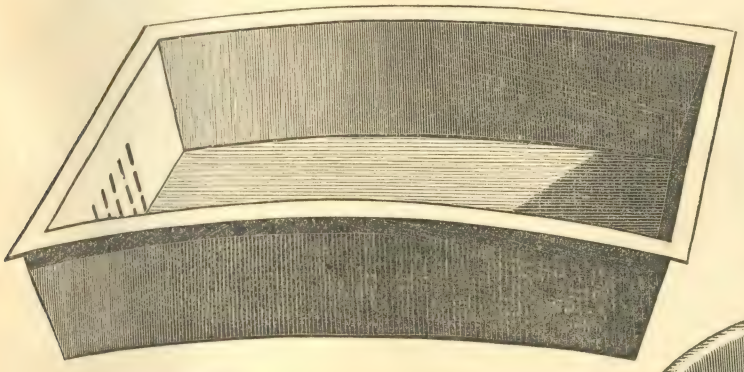
No. 1 KITCHEN SINKS.

15 × 12½ × 8,	21 × 13½ × 8,	27 × 14½ × 8,	33 × 15½ × 9 inches.
18 × 13 × 8,	24 × 14 × 8,	30 × 15 × 8,	36 × 16 × 9 inches.

We also make the following extra sizes, *to order*:—

18 × 11 × 8,	21 × 13 × 6,	24 × 18 × 13,	30 × 18 × 7,	36 × 20 × 9,	36 × 26 × 9,	48 × 20 × 12,	60 × 20 × 9,	72 × 24 × 16 inches.
18 × 13 × 6,	24 × 14 × 6,	27 × 14 × 6,	34 × 14 × 4,	36 × 20 × 12,	42 × 20 × 9,	48 × 24 × 16,	70 × 20 × 9,	
18 × 15 × 9,	24 × 18 × 10,	30 × 15 × 6,	36 × 18 × 8,	36 × 24 × 16,	48 × 20 × 9,	54 × 20 × 9,	72 × 20 × 12,	

No. 2 SINK, for Circular Staircases.

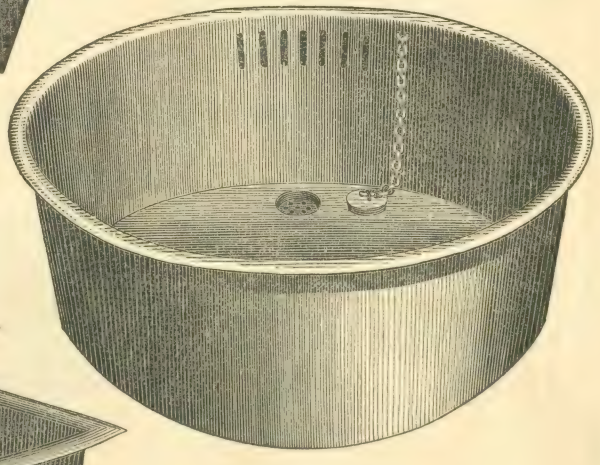


27 × 16 × 9 inches.

PLUGS. **DRAINERS.**

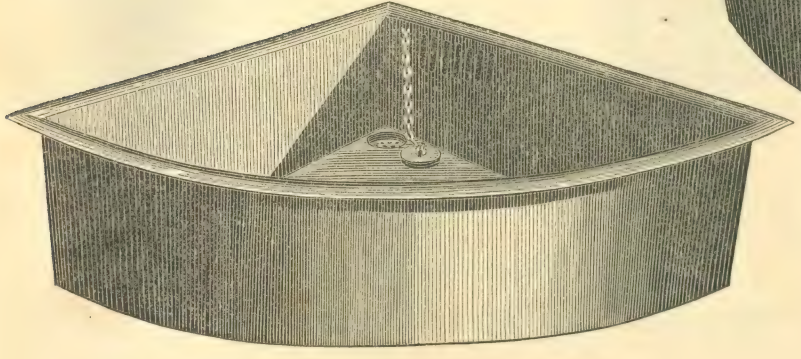
1¾, 2, 2¼, 2½, 2¾, and 3 inches diameter.

No. 4 OVAL SINK.



21 × 18 × 10 inches.

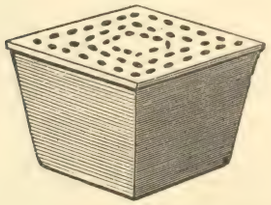
No. 3 CORNER SINK.



14 inches broad on each side by 6 inches deep.
18 inches broad on each side by 7 inches deep.
22 inches broad on each side by 7 inches deep.

Scale, 1½ inch,—1 foot.

No. 1 SQUARE SINK TRAPS.

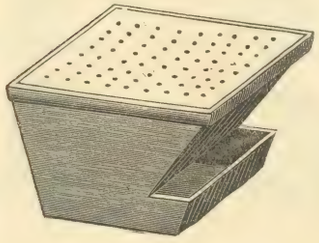


4, 5, 6, 7, 8, 9, 10, 11, and 12 inches.

No. 2 ROUND SINK TRAPS.

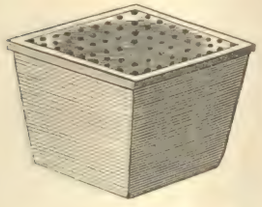
4, 5, 6, 7, 8, 9, 10, 11, and 12 inches.

No. 3 D SINK TRAP.



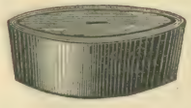
8 and 12 inches.

No. 4 SQUARE SINK TRAPS.

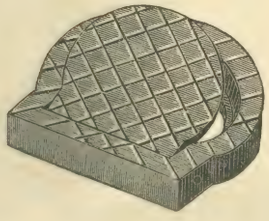


Heavy Pattern, 8 and 12 inches.

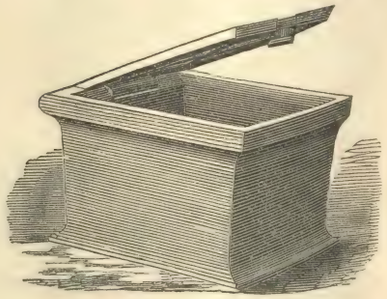
No. 1 STOPCOCK COVER.



No. 2 HINGED STOPCOCK COVER.



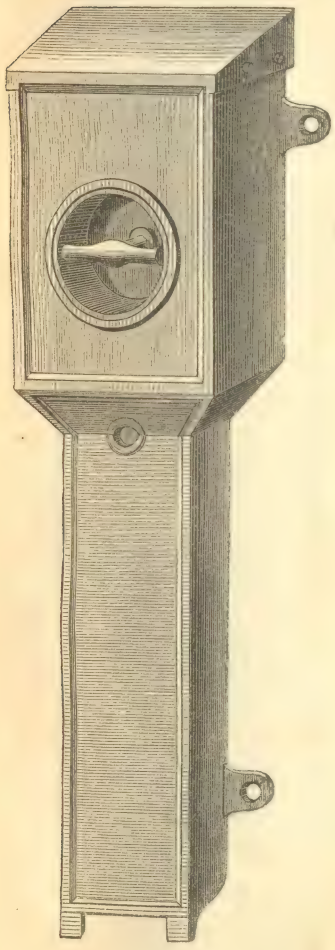
No. 3 HINGED STOPCOCK CASE.



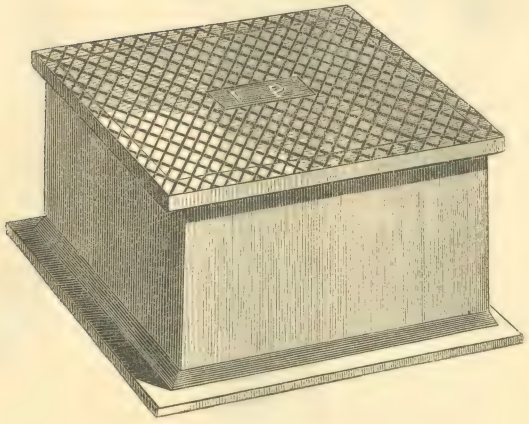
6 × 6 × 7 inches.
8 × 6 × 7 inches.

Scale, 1½ inch—1 foot.

STANDCOCK CASE.



FIRE PLUG BOX.



$16\frac{1}{2} \times 13\frac{3}{4} \times 8\frac{3}{4}$ inches deep.

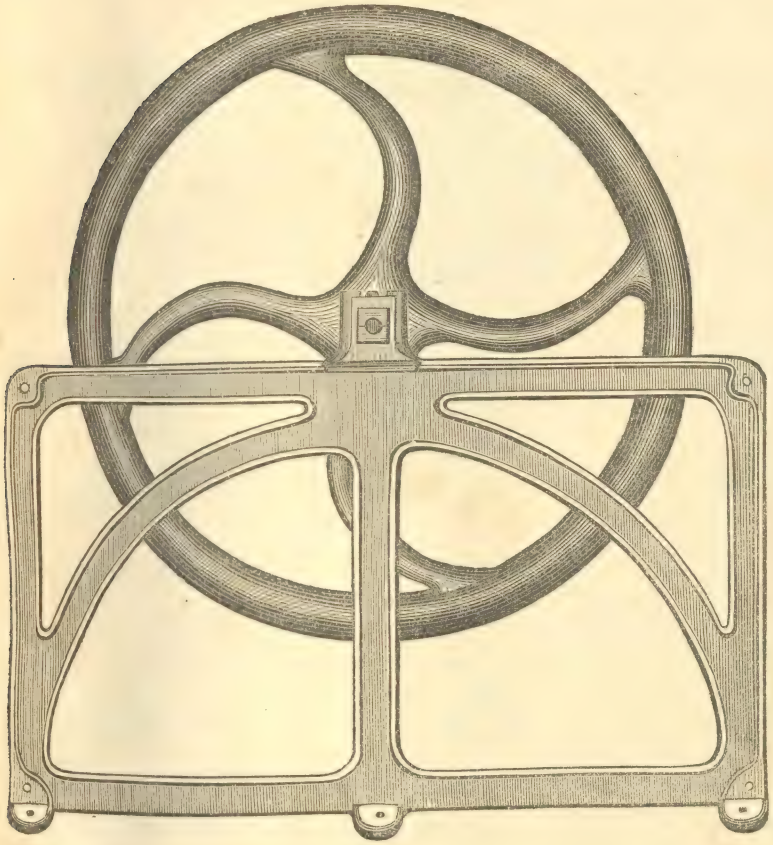
Scale, $1\frac{1}{2}$ inch—1 foot.

No. 1 PUMP.

No. 2 PUMP.

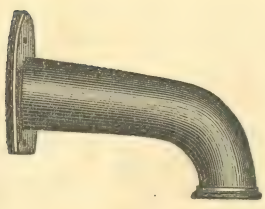
Scale, 1½ inch,—1 foot.

ENGINE PUMP FRAME AND FLY WHEEL.



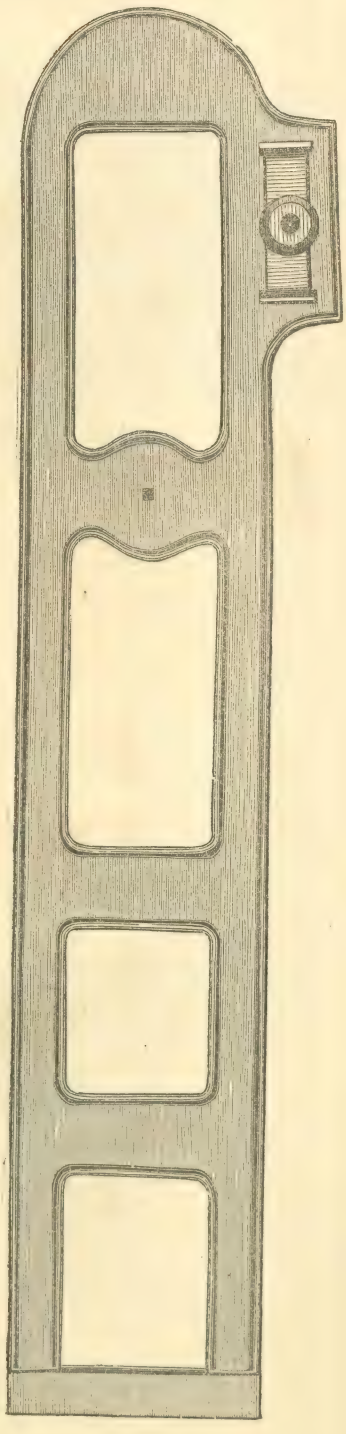
Frame, 5 feet × 3 feet 1 inch.
Fly Wheel, 4 feet diameter.

No. 1 PUMP NOZZLE.



1½ and 2 inches.

FORCE PUMP FRAME.



Light Pattern, 5 feet 4 inches high.
Heavy Pattern, 5 feet 6 inches high.

No. 1 PAN CLOSET TRUNK and COVER.

9 inch and 10 inch Pan.

LONG LEVER.

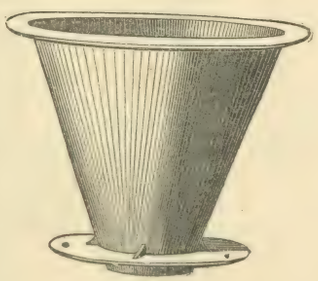
SHEER.

SHORT LEVER.

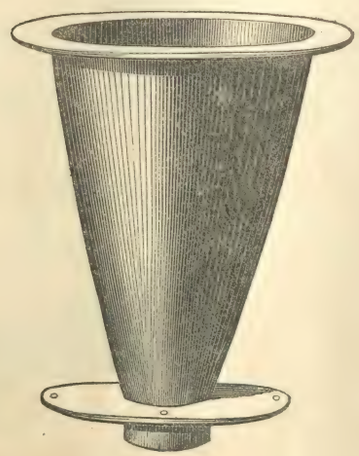
CRANK.

UPRIGHT.

No. 1 SHIP W. C. BASIN.

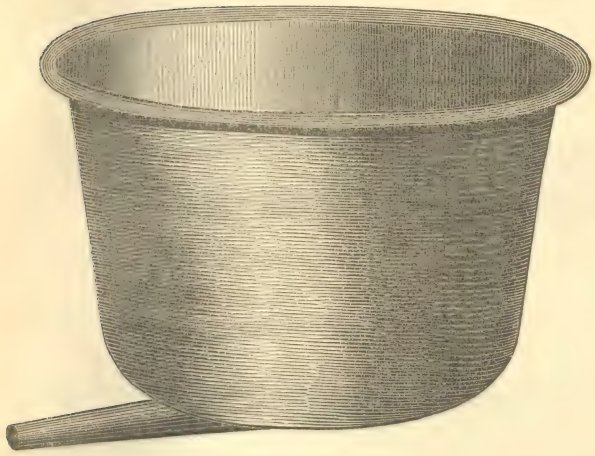


No. 2 SHIP W. C. BASIN.



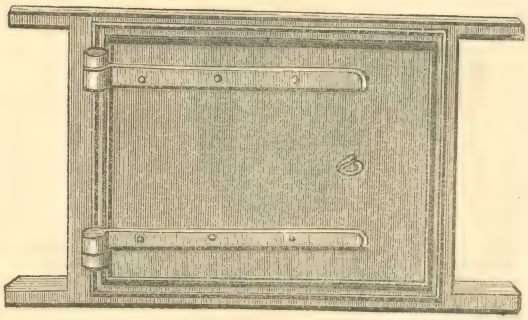
Scale, 1½ inch—1 foot.

With or without SPOUT.



6, 8, 10, 12, 14, 16, 18, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, and 100 Gallons.

FURNACE DOOR.



6, 7, 8, 9, 10, 11, 12, and 14 inches.

FURNACE LINTEL.

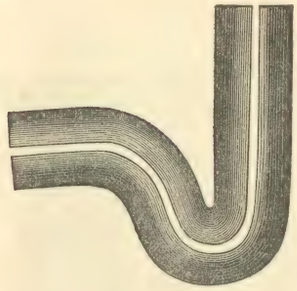
FURNACE GRATE.

6, 7, 8, 9, 10, 11, 12, and 14 inches.

Scale, 1½ inch—1 foot.

PLUMBERS' TOOLS.

SYPHON MOULD BLOCK.

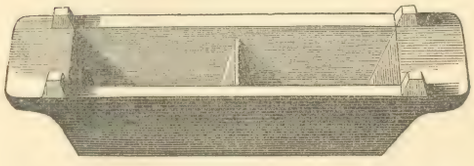


1, 1½, 2, 2½, 3, 3½, 4, and 4½ inches diameter.

ELBOW MOULD BLOCK.

1, 1½, 2, 2½, 3, 3½, 4, and 4½ inches diameter.

No. 1 LEAD INGOT.



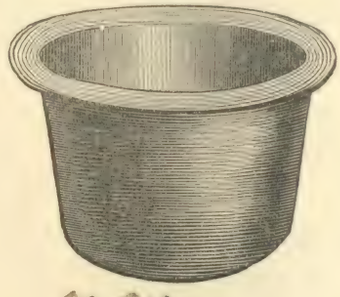
No. 2 LEAD INGOT.

Brand can be Cast in Bottom *to order*.

SOLDER POT.

4, 5, 6, 7, 8, 9, 10, 11, and 12 inches diameter.

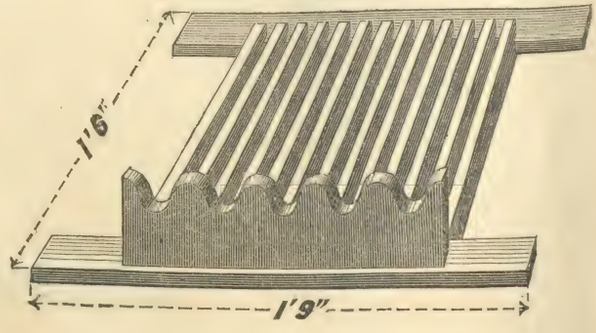
LEAD BOILER.



12, 14, 17 and ~~18~~ 20 24 inches diameter.

CHAFFER PAN.

FIRE GRATE AND FRONT.



For 3, 4, and 5 Bolts.

Scale, 1½ inch—1 foot.

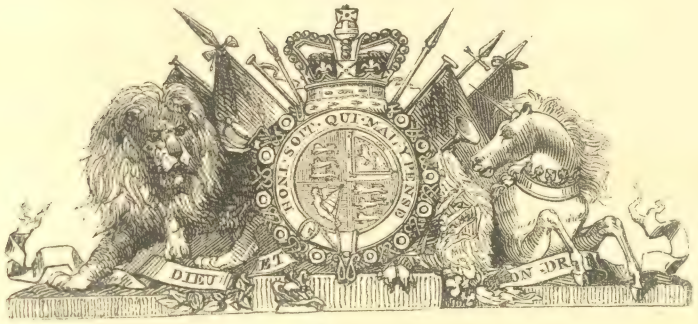
CATALOGUE OF

MACFARLANE'S

CAST IRON MANUFACTURES,

FOURTH EDITION.

AWARDED INTERNATIONAL MEDAL, 1862.



Contractors by Special Appointment to Her Majesty's War Department.

VOL. II.—SANITARY APPLIANCES.

WALTER MACFARLANE & CO.,

ARCHITECTURAL IRONFOUNDERS AND SANITARY ENGINEERS,

SARACEN FOUNDRY, GLASGOW.

AND 38 BEDFORD STREET, STRAND, LONDON, W.C.

CONTENTS OF VOL. SECOND.

SANITARY APPLIANCES.

A NEW SYSTEM OF SEWERAGE,

AND OTHER SANITARY ARRANGEMENTS,

FOR CONVERTING THE EXCREMENTARY REFUSE, DRY GARBAGE, ASHES, &c., OF TOWNS INTO THEIR PROPER AND MOST VALUABLE PURPOSES.

A PAPER READ BEFORE THE PHILOSOPHICAL SOCIETY OF GLASGOW, ON THE 8TH APRIL, 1857.

BY WALTER M'FARLANE, ESQ., ENGINEER,

OF WALTER M'FARLANE & CO., SARACEN FOUNDRY, GLASGOW.

THE subject of this paper—"A new system of sewerage, and other sanitary arrangements, for converting the liquid refuse, dry garbage, ashes, &c. of towns, into their most valuable purposes,"—embraces a range of objects that to many minds may not be of the most inviting nature, but which, from various causes, has occupied a very considerable share of the writer's attention for many years.

If we reflect for a moment on the present condition of our large towns, as regards their sanitary arrangements, we may almost wonder that the mortality of their inhabitants is not even greater than it is, considering the many agents that are at work for destroying health and life. Such large masses of the population are now confined to so small a space, that it is absolutely necessary that arrangements suitable for this new order of things should replace the customs and rude contrivances of a past age.

In order that we may more clearly understand the subject of this paper, I have divided it into two distinct sections, treating first the liquid or sewerage portion, and then the dry garbage, ashes, &c.: my object being to separate and convert the materials contained in these two classes of town refuse into their proper and most valuable uses, and thereby not only add to the health, but also to the wealth of the community.

How to purify and dispose of our town sewerage, is a problem that has been prominently before the public for many years; and, notwithstanding all that has been said and done in the matter, it seems as far from a practical solution as ever, so that, under these circumstances, information from whatever source is anxiously to be desired.

Before we can be expected to treat successfully upon any subject, it is necessary that we make ourselves thoroughly conversant with its leading features and general properties. The great want of success that has hitherto attended the efforts made to settle this question, has, in my estimation, very much arisen from neglecting this. Most of the plans—indeed I may say all the schemes—hitherto propounded, have taken, as the basis of their operations, the sewerage as it at present exists, without for a moment reflecting on the possibility of its being put into a better shape. I shall, therefore, before attempting to dispose of the sewerage, first enquire into its sources, and then propose such arrangements as will best suit for its collection and ultimate disposal.

MIDDENSTEADS and PRIVIES.

The greatest portion of the excrementary matter of the community have hitherto been, and are at present, collected by middensteads and privies, and these receptacles, in the hands of the dustman, become, in too many cases, complete manure manufactories on a small scale. The entire removal of these objectionable repositories of filth cannot be too soon accomplished. To see, in a densely-populated community, and amongst so much apparent refinement, accumulations of this loathsome kind remain putrifying for months, is an evidence how blunted our feelings become by custom. These are by no means confined to the back closes and courts of the older parts of our larger towns, but are quite common in many of our educational establishments and public factories. Nay, even many of the fine suburban villas and country residences we see rising around us are no better off in this respect: and thus habits of filthiness grow up amongst the population.

I find—calculating as nearly as possible from the valuable statistical data of Dr. Strang—that in Glasgow, with a population of 400,000 persons, the excrementary evacuations of up-

wards of 300,000 of that number are collected in privies, and as chamber refuse discharged into middensteads, and are thus spread over an immense surface, where they lie putrifying and giving off, free and unimpeded, an amount of effluvia that is fearful to contemplate. To this cause alone we may impute much of the excessive mortality in our large towns. It is certainly time these rude and primitive arrangements were giving place to others more in keeping with the times we live in, and the advanced spirit of the age.

WATER CLOSETS.

Water, from its great abundance and disinfecting properties, naturally provides us with the readiest means for collecting the excrementitious matter of our dwellings. It cannot be too well known, that on the immersion of these substances in water, they cease to give off offensive odour, and to this cause we may impute the great increase that has taken place in Water Closets within the last few years. These vary greatly in form and construction, but their leading features are the same. Impressed with the belief that a simpler and more efficient Water Closet was desirable, I have constructed one embodying these properties. (See Illustration.) It has a large water surface, into which the evacuations are at once discharged. It requires no bent syphon pipe. A hydraulic trap, above the discharge pipe, prevents the ingress of gases from the sewerage; and, by a peculiar construction of valve, it cannot be choked or flooded, and it is a valuable agent for flushing the drains in connection. It requires no cistern nor water pressure, is as efficient with an intermitting as with a constant supply of water, and requires less than any closet in use. The whole working geering is entirely out of the control of the person using the closet, and no action of any part takes place except once a-day.

It has been subjected to the most varied and trying situations in private dwellings, lodging-houses, schools, reformatories, factories, barracks, hospitals, lunatic asylums, railways, streets, &c., for the last six years; and wherever it has been introduced, has given complete satisfaction, and is coming into general use throughout the kingdom and colonies.

PUBLIC CONVENIENCES.

Water Closet and Urinal Conveniences, for the out-door male and female population of our streets and thoroughfares, should be amply provided by the authorities, in order to do away with Privies, and prevent the deposit of filth in out-of-the-way corners, and on streets and walls. Most of our large towns are now beginning to move in this direction, and are providing such conveniences. Large numbers of our population are constantly on the streets; and if we wish to create habits of cleanliness and decorum, proper provision should be made for complying with the common necessities of our nature. If accommodation of this kind were provided in the various districts of our towns, a very great improvement might be expected to take place in the habits and customs of society. At present, generally speaking, no provision is made for the out-door male and female population, and thus their habits in this respect are much the same as those of the lower animals. Assuredly a duty rests upon our public authorities in this matter; and if they fail in providing the necessary accommodation, they are responsible for engendering amongst the population those filthy habits that pollute many of our finest buildings and streets at the present day.

We have much to learn, even on the point of common public decency and cleanliness; and it is much better at once to recognise and supply such wants, than to pass by what some may fastidiously consider a nasty subject. The neat ornamental style in which street accommodation of this style can be supplied, and the freshness and cleanliness of the system, removes any objections that may formerly have been urged against its adoption.

CESSPOOLS.

Cesspools are another of the objectionable arrangements in towns. In some districts they have been extensively introduced, and they necessarily call for some remarks. Water closet and other refuse generally emptied themselves into these receptacles till within the last few years, the liquid portion overflowing and discharging itself into the nearest drain, river, or watercourse, whilst the solid portion was retained, and periodically cleaned out by buckets, but was as often allowed to lie stagnating for years. Cesspools may now, however, be considered amongst the things that were, the very general introduction of sewerage having superseded them. Our authorities should now see that they are properly cleaned out and filled up, as assuredly, if allowed to remain, they will be productive of the worst consequences.

PRESENT SEWERAGE SYSTEM.

I will now endeavour to describe the agency by which I propose to carry the excrementary matters out from the midst of the population, taking a brief glance at the present sewerage arrangements for that purpose. You are all aware that the sewerage of a town is at present understood to consist of the underground drainage, rainfall, waste water, excrementitious matter from water closets, and other liquid refuse from public works, slaughter-houses, &c. These form one general mass, that discharges itself into our rivers—a system altogether reprehensible, for in so doing we are just removing the filth of one part of the town to another part equally or more objectionable. If we examine the substances that enter the sewers, we shall find them differing in their nature the one from the other, and each requiring a treatment peculiar to itself. For these reasons, I have divided them into two classes, distinguishing the one class by the term *Watery*, and the other by the term *Excrementary*. The watery class, being composed of the underground drainage,

rainfall, and waste water of the community, is harmless, and of no value. The excrementary class, consisting of water closet discharges, liquid refuse of public works, slaughter-houses, &c., is valuable, but destructive to human life, if allowed to lie for any length of time amongst the population.

The volume of water and other matters that flow through our sewers is immense, approaching, in a population of four hundred thousand persons, to from twenty to twenty-five million gallons per day. This shows the utter hopelessness of operating upon such a mass with a view to purify or extract its fertilizing properties; and it is this that has suggested to my mind the absolute necessity of a better mode of collection before we can reasonably expect to free our rivers of their present impurities, and save to our country that wealth which in our ignorance we are throwing away. Of late years a change has taken place in our sewerage system, which has in many instances converted them to purposes they were not intended for—I allude more particularly to the receiving of water closet and such like refuse, which formerly were retained in cesspools. Since the introduction of these matters, no extra provision whatever has been made for treating this new element, until the sewerage has become a nuisance of such magnitude as to demand our instant and energetic endeavours for its purification. By pursuing the course we have hitherto done, we act in two ways against the dictates of reason: first, we throw away matter which, if properly treated, would nourish those vegetable products from which the staple of our food is derived; and, secondly, we convert what has been given us for a cleansing and purifying agent into a loathsome stream of putrefaction, carrying in its watery emanations disease and death, and covering as with a plague some of the noblest highways of commerce.

Innumerable attempts have been made, and are now making, to free the sewerage of its dangerous but valuable matters, before discharging into our rivers; but so long as such an immense volume of water requires to be operated upon, we can have no hope of a favourable result. It is computed that the solid excrement of the community is generally mixed with fourteen hundred times its bulk of water; or, in the words of Professor Way—"Ere we could obtain one ton of dry matter comparatively worthless, we would require to put three thousand tons of sewerage through an operation." A knowledge of these facts, combined with considerable opportunities of experimenting on the general bearings of this subject, have enabled me to arrive at conclusions that warrant me in believing that we are only entering the threshold to further discoveries of the value of the sewerage, and that the remodelling of our sewerage is imperatively required. I cannot but look upon this branch of our sanitary arrangements as in a state of the most primitive simplicity, and altogether behind the age we live in. Scheme after scheme have followed each other in rapid succession—many of these gave evidence of considerable ingenuity, whilst all have brought such an amount of information to bear upon the subject, as to give us the hope that the day is not far distant when we shall see, that which is at present the fruitful source of disease and death, converted into a valuable nourisher of the vegetable kingdom.

NEW SEWERAGE SYSTEM.

The means I propose employing for carrying out this new system of sewerage is by adopting two separate and distinct sets of sewers, discharging the matters embraced by one section into what I have designated *Water Sewers*, and the matters embraced by the other section into which I have designated *Excrement Sewers*.

WATER SEWERS.

The Water Sewers would be wholly confined to the conveying away of the underground drainage, rain-fall, and waste water of the community. These being all in their nature harmless, and comparatively free of gross impurities, would be discharged into the nearest or most suitable river, without undergoing any operation further than, if thought necessary, intercepting the solid matters they contain.

The position of the Water Sewers is shown at A, on the accompanying drawing (Fig. 1); and I would propose that the sewers at present in use for the general sewerage should be employed for this purpose; no alteration whatever would be required, further than to see that they are in perfect order, and in every case where cesspools exist in connection with them, they should be cleaned out and filled up. The general sewerage of most towns cannot be but in an imperfect state, from the fact that hitherto sewers have been laid down generally to answer special circumstances, rather than with a view to carry out any combined plan.

EXCREMENT SEWERS.

Having thus stated my views as to the water sewerage, I will now proceed to explain the proposed Excrement Sewers, These being separate from, and additional to the Water Sewers, will of course require to be entirely new, and would be wholly confined to the carrying out from the midst of the population, water closet and such other liquid refuse as from their nature are destructive to health, but may be converted to useful purposes. These sewers I would arrange in such a manner as that the solid portion would be retained by intercepting Ordure Tanks, whilst the liquid parts would flow off by means of pipe sewerage to some place or places where their valuable properties would be retained to the community. In order to carry out this scheme the following new works would be necessary:—1. Excrement supply sewers of glazed earthenware, connecting the water closets with the Ordure Tanks; 2. Cast iron intercepting Ordure Tanks; 3. Excrement discharge sewers of glazed earthenware.

Fig. 1 is a sectional elevation of one of the intercepting Ordure Tanks, as it would appear in actual operation.

Fig. 2 is a plan of the apparatus, showing the top cover open.

The main central water sewer is at A. The excrement supply sewers B, are for conveying the water closet matters to the Ordure Tank. They are of the usual glazed earthenware, from four to nine inches in diameter, and placed on each side of the street, three feet below the ground, having branch connections from the water closets, and all flowing into intercepting Ordure Tanks, D.

The intercepting Ordure Tanks, D, are of cast iron, of an oblong shape, about twelve feet long, three feet broad, and nine feet deep, divided into two compartments of equal size, to be wrought alternately.

The excrement supply sewers, B, discharge themselves into the tank from each side, by the double branch pipes, C, having at its outlets a stop-valve, E, actuated by a lever F. A gutter, G, one foot wide by two feet deep, runs across the centre of the tank, into which the liquid portion overflows; and in the sides of this gutter is a sluice plate, H, by pressing down which the liquid flows to the discharge sewer, L, leaving the solid ordure in the Tank comparatively free from water, and ready for being emptied by the ordure waggon. A perforated plate, I, is fitted in each Tank, to prevent the grosser parts of the solid matter, including paper, straw, &c., from getting into the excrement discharge sewers. The man-hole doors, J, are level with the street, and hinged to meet in the centre, thus giving ample room to get into the inside at any time. An ordure discharge pipe, K, is in each compartment, having on the one end a screwed thimble, which fits the elastic hose of the ordure waggon. From twelve to twenty of these intercepting Ordure Tanks would

Fig. I.

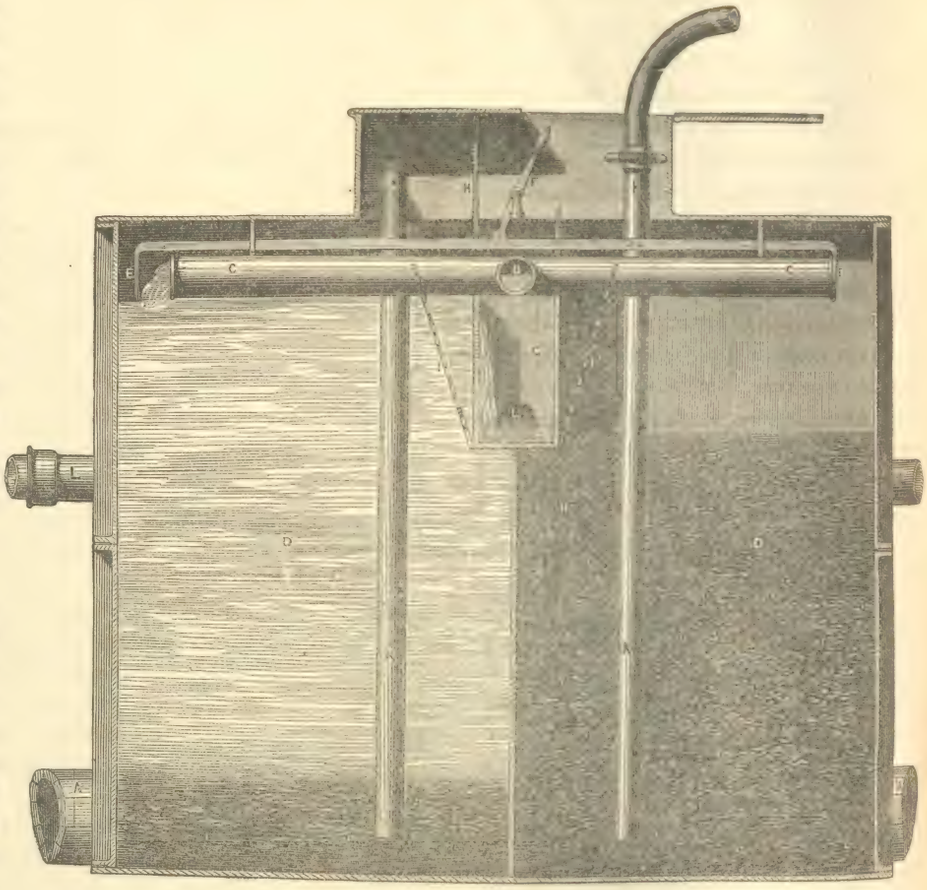
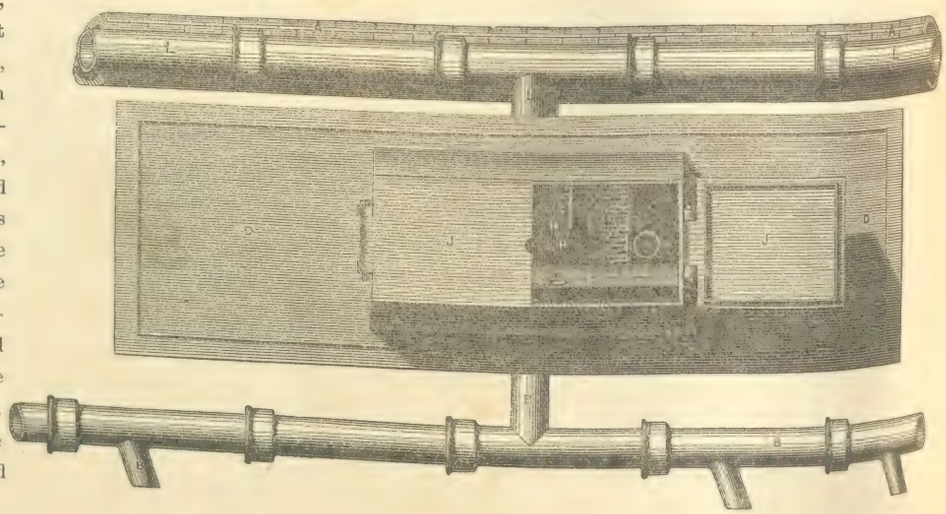


Fig. II.



be required in a population of 400,000 inhabitants. Each compartment holds from seventy to eighty cubic feet of ordure, more or less mixed with water. They would require to be emptied once or twice a day, each load weighing about two tons, the daily weight, of course, depending on the extent to which the water could be withdrawn.

Fig. 1 represents one of the compartments of the Tank filled with ordure, the surface water withdrawn, and the elastic hose attached, ready for discharging the accumulations to the Ordure Waggon (Fig. 3). The other compartment is receiving the matters from the excrementary supply sewers, B, the solid parts precipitating to the bottom, whilst the liquid parts, on passing through the sluice-plate, I, and running over the lip of the centre gutter, G, thus flow off to the excrementary discharge sewers, L.

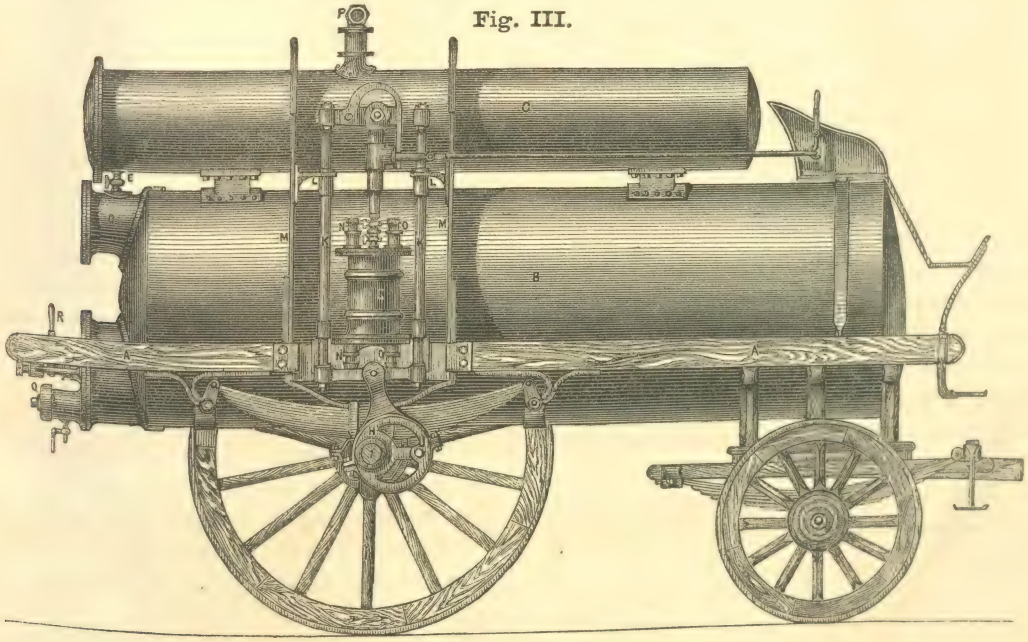
The excrement discharge sewers, L, are made of the usual glazed earthenware, averaging from 12 to 24 inches diameter, and placed about 6 feet below the ground level, for conveying the liquid that flows from the intercepting Ordure Tanks, to proper receptacles or reservoirs out of the town.

ORDURE WAGGON.

The Ordure Waggon (Fig. 3) is for emptying the Ordure Tanks of their solid accumulations, and conveying the matter to the manure depot. It is an excellent application of the atmospheric principle to such purposes. It consists of a spring waggon, A, on which rest a cylindrical iron tank, B, three feet in diameter by ten feet long; and above this are two lateral tubes, C, one foot three inches in diameter by eight feet long, receiving the gases disengaged from the matters during the charging. A projecting pipe, D, is on the back, on which is placed an index, E, to show the degree of vacuum produced by the pumps, G, mounted on each side of the machine. Each of the pistons of the two pumps is driven by an eccentric, H, mounted on the axle, I, of the back wheels. As this Waggon travels along the streets, the action causes the rotation of the eccentric fixed on the wheel by the pin, J. The pistons of the two pumps are guided in their rectilinear working by the two vertical rods, K, which slide paralled in the two guides, L, fixed on each side of the upright frames, M.

Upon the two ends or covers of the pumps are attached two tubes, N; each contains a spring valve, opening from the end inwards, for the suction, and another tube, O, with the valve opening outwards, for the discharge or descent, the pumps being double-acting, each end having one valve for suction, and one for the discharge. The result is by the aid of elastic tubes screwed to the pipes N, and the other end connected to the pipe with two branches, P, on the top of a chest with an exhaust-valve, the exterior of each pump is thus put in connection with the Tank. Supposing, then, that the Waggon is set in motion, and starts from the manure depot, the air and gases in the cylinders will be driven to the outside, and a vacuum is produced before the Waggon arrives at the intercepting Ordure Tank. A connection is then made by coupling an elastic hose to the back of the circular disc-valve, Q, and the ordure discharge pipe, K (Fig. 1). The conductor has then nothing more to do than to pull the lever, R (Fig. 3), and the ordure in the Tank empties itself into the Waggon almost instantaneously. When the Waggon is full, he again stops the connection by the lever, R, uncouples his hose, and drives off and delivers the contents at the manure depot. Thus the whole operation of emptying is the work of a few minutes, and without giving the slighest offence to either our sense of smell or sight. This system of emptying these matters has been in extensive use for several years in the United States, and has been introduced into Paris within the last twelvemonth, with great success.

Fig. III.



By this system of excrement sewers, in a population of 400,000 there would only be about 2,000,000 gallons of excrementary sewerage daily, or as much as would fill a sewer from 18 to 24 inches diameter, running at the rate of two miles per hour. No paper, rags, straw, nor other insoluble matter being mixed up with it, there would be no greater difficulty nor expense attending its transport and disposal than the same quantity of water, whilst being so concentrated, its value to the agriculturist would be increased. The solid matters recovered from the Ordure Tanks might be converted into a concentrated dry portable manure, of much value.

Were it considered desirable, a large amount of human excrement could be obtained in a comparatively pure state, of much value, and without creating the slighest smell, as Ordure Tanks of a small kind could be placed underground, adjacent to each of our public street Conveniences, into which the accumulations would be discharged daily, and comparatively free of water. Small tanks could also be placed at each of our street Urinals, and in this case the Urinal would be kept perfectly free of water. The same means of emptying these tanks would be employed as in the large ones in connection with the sewerage. It is still, however, matter for consideration whether or not all the excrementary refuse should go into the excrementary sewers.

These are my views as to how the excrementary refuse of our towns should be carried out from the midst of the population. By thus keeping the excrementary matters by themselves, and separating the liquid from the solid parts, we put them into the best state for converting them to their most profitable use. In a population of 400,000, with the present sewerage system there are about 22,000,000 gallons of sewerage daily, or in bulk as much as would fill a stream six feet wide by three feet deep, running at the rate of two miles per hour. The great expense attending the transit of such an enormous volume of water, has hitherto prevented the sewage in a liquid state from being disposed of to agriculturists, although an almost universal opinion seems to prevail, that this is the best and most profitable mode of using it. When freed, however, from such an enormous quantity of water, much of the difficulty which has hitherto prevented it from being profitably turned to account will be removed.

DRY GARBAGE.

Having thus stated my plans for re-modelling the sewerage, and treating the liquid and excrementary matters of the community, I shall now take up what I have designated the dry section of my subject.

It is impossible to carry out any really efficient measures, having for their object the purification of our towns and rivers, without thoroughly overhauling the whole subject of town cleansing; the liquid and dry refuse being so mixed up with each other, it is necessary, if the one is to be dealt with, the other must be also.

The present arrangements for collecting the dry garbage, ashes, sweepings of our houses, &c., are in exactly the same state as they have been for hundreds of years. Why such should be the case, is a matter worthy of the most earnest enquiry, as it is a question of life and death to thousands of our teaming population. It appears to me that one cause of this anomalous state of things is that the uninviting nature of the subject is such as to prevent its getting that attention which other departments of our sanitary arrangements have received. Another cause may be the vested rights of individuals, preventing our authorities acting in the matter. If this is one of the obstacles, the sooner it is removed the better. No doubt the rights of private property must be respected; but whenever the exercise of these rights interferes with the general welfare of the community, then it becomes the duty of those in authority to step in and cure the evil.

Nothing can be more destructive to health, and repulsive to our feelings, than the present state of the middensteads throughout the kingdom, as they are not only receptacles for the dry garbage, ashes, sweepings, &c., but in many, indeed most cases, they receive all the chamber refuse of the dwellings, as well as the excrementary matters from privies, all the substances lying putrifying for months, to the great injury of the community. Had time permitted, it would have been an easy matter to prove this, by what is taking place around us every day; but information is now getting so widely diffused on this question, that I believe there is little need for pressing further the adoption of better arrangements.

Before entering into this part of our subject, it will be necessary to keep in mind that the dry garbage of a town is understood to consist of the ashes, sweepings, vegetable refuse, &c. of dwellings, courts, streets, &c.; and to collect these waste matters to the best advantage, both as regards health and economy, is the first object in view.

ASH BINS.

Ash Bins of cast iron, for receiving the dry garbage, ashes, &c., and to hold not more than a load, should replace the present large and unsightly middensteads. These would necessarily be of various kinds, and be above the ground. For these Ash Bins I have constructed a cast iron sliding door, with a hopper in the centre, through which the ashes, &c., pass, and a peculiar lock, to prevent any person but the attendant having access to the inside. By sliding the door to one side, the accumulations can be periodically discharged. (Fig. 36.)

ASH SHAFTS.

For high tenements of dwelling houses, warehouses, &c., I have constructed an upright Ash Shaft (Fig. 42), which is carried up in the wall to the top of the building, forming part of the staircase wall. Into this shaft there is a cast iron slide door, through which the ashes, &c. of each flat are discharged.

The provision made for accommodation of this kind, even in the finest buildings erected at the present day, display great poverty of conception, as regards this branch of our domestic arrangements. To improve this state of things, and introduce appliances in every respect equal to the advancement that has taken place in other departments of trade, has been the aim of the writer for years.

Composition of the Dry Garbage, Ashes, &c., of Town Dwellings.

Much valuable material is lost on account of the dry refuse being mixed up with excrementary refuse; and in order to show this, I have analysed four different classes of dry garbage, ashes, &c., taken from 1st, 2d, and 3d class dwelling houses, and from office premises, the ashes being passed through a $\frac{3}{4}$-inch wire sieve or riddle. The following table gives the result:—

	1st Class Dwellings.	2d Class Dwellings.	3d Class Dwellings.	Counting Houses.	Total.	Rate.	Amount.
	Cwt. qrs. lbs.	Cwt. qrs. lbs.	Cwt. qrs. lbs.	Cwt. qrs. lbs.	Tons. cwt. qr. lbs.	℔ Cwt.	£ s. d.
Ashes,	18 1 18$\frac{1}{8}$	15 3 8$\frac{3}{8}$	22 2 25$\frac{1}{2}$	8 3 27$\frac{7}{8}$	3 5 3 23$\frac{7}{8}$		
Vegetables,	... ...	... 2 11	... 2 4	... ...	... 1 ... 15	$\frac{3}{4}$	0 4 2$\frac{1}{2}$
Coals, Cinders, and Wood,	4 2 ...	2 2 1	1 2 ...	1 ... 3	... 9 2 4	2$\frac{1}{2}$	0 2 0$\frac{1}{2}$
Bones,	 1	... ... 7$\frac{1}{2}$	 5	... ...	... ... 13$\frac{1}{2}$	6/3	0 1 6
Rags and Rope,	 5	 7	 14	... ... 6$\frac{1}{2}$	... ... 1 4$\frac{1}{2}$	4/8	0 1 2$\frac{1}{2}$
Paper,	... ...	 10	... ...	... 1 18	.. ... 2 ...	2/3	0 1 1$\frac{1}{2}$
Iron,	... ...	 17	... ...	... ...	 17	3/3	0 0 11$\frac{1}{2}$
Brass,	... ... $\frac{1}{2}$	... ... $\frac{1}{8}$	... ... $\frac{1}{2}$	... ... $\frac{1}{8}$	... ... 1$\frac{1}{4}$	69/4	0 0 9
Lead,	... ... 1$\frac{3}{4}$	... ...	... ...	... ... $\frac{1}{2}$	... ... 2$\frac{1}{4}$	21/	0 0 5$\frac{1}{2}$
Crystal,	 1	... ...	... ...	... ...	 1	9/4	0 0 1
Bottles,	 8	... ...	... ...	... ...	 8	1/	0 0 0$\frac{1}{2}$
Earthenware,	... ...	 14	 7	... ...	 21	...	0 0 0
Total Weight,	23	19 2 ...	25	10 2 ...	3 17 3 26$\frac{3}{8}$		0 12 4$\frac{1}{2}$
Value per Ton,	2/8	3/3	2/6$\frac{1}{2}$	4/1	2/10		

The quantity of dry garbage, in a city of 400,000 inhabitants, I have estimated at 40,000 tons per annum, irrespective of the street sweepings. This, however, must be considered only as an approximation.

In concluding this paper, I may be permitted to state, that for the last six years I have been unremittingly engaged in perfecting this scheme. The outlay incurred in experimenting and otherwise has been great; but I have the high gratification of believing, from the success that has hitherto attended my efforts, that these have not been in vain—and I am sanguine as to their ultimate and complete realisation. I have now the pleasure of inviting the public generally, and Boards of Health and Municipal Authorities in particular, to the prosecution and speedy accomplishment of this important sanitary reform.

It will be observed on perusing this paper, that the writer has wholly confined himself to the mechanical section of the subject, and has left the ultimate disposal of those matters when collected an open question.

PART V.

WATER CLOSETS.

It is now nine years since we first introduced our Public Water Closet Appliances, and the excellence of their construction is best evinced by the growing favour in which they are held, wherever they have been adopted. We hope the increased variety of patterns now illustrated, will more easily enable our customers to select the style that is likely to be most suitable for the intended situation. Our aim has been to provide water closets thoroughly suitable for public purposes, their requirements being entirely different from those of a domestic nature.

Our water closets have all their geering enclosed within the trough, and from the peculiar construction of the valve, they require no bent syphon pipe, and cannot by any possibility be choked or flooded, they require no cistern nor water pressure, are as efficient with an intermitting, as with a constant supply of water, and require less than any closet in use; the persons using our closets have nothing whatever to do with their arrangements, as no action of the working parts takes place except once in the twenty-four hours, *when the person, whose duty it is, discharges their contents.* They can be fitted into any common privy or closet already in use, and can be made to accommodate any number of persons in one range, they can also be partitioned into any number of separate compartments, one range can thus be made suitable for both males and females, whilst a portion of the same range may be kept separate for the counting-house employees or superintendents; in like manner, as in the case of schools, &c., the same range may be divided to accommodate boys and girls, and have separate compartments for both male and female teachers, by this means a multiplicity of apparatus is avoided, whilst, at the same time, as complete privacy is provided for as if each seat was a separate water closet.

As a general rule for establishments requiring water closet accommodation, one seat should be allowed for every thirty or forty persons, according to circumstances; and two feet wide is the space allowed for each person in all our water closets, unless specified to the contrary.

We would call special attention to the mistake generally made of using stone, brick, and wood in the construction of the walls, roof, &c. of public water closets. These materials are all porous in their nature, and become in time loaded with effluvia, and what little light they have is borrowed through panes of glass, whilst the ventilation is generally of the rudest and most imperfect description, and consequently, a nauseous

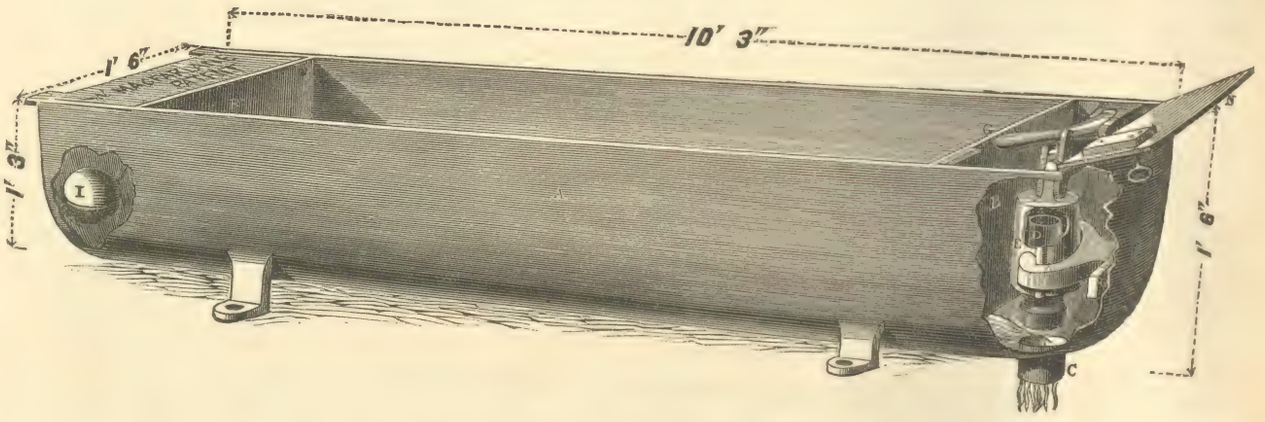
effluvia is too often felt on entering one of them; this may be entirely prevented by introducing the direct rays of light and ventilation immediately above the seat; it is here the effluvia is generated, at each discharge from the person; it should at once be carried off, and not allowed for an instant to hang in the apartment; it cannot be too well known that effluvia of this kind has no tendency to ascend, it is inclined to hang where it is generated, and hence the necessity of creating a current to absorb and carry it off. The great advantages our water closets with cast iron walls and roof have is manifest, the imperishable nature of their materials and its imperviousness to filth and gases, combined with the manner of lighting and ventilating them, by means of minute perforations in the walls, render them marvels of sanitary construction.

The many public conveniences we have fitted up on the streets, &c., of the large towns in this country, the continent, and in America, show that although corporate bodies have hitherto very much overlooked their duty, in not providing the necessary Water Closet accommodation for the out-door male and female population of our streets, &c., they are now becoming fully alive to the importance of doing so, and our ornamental cast iron structures are becoming a leading feature wherever large numbers of persons are congregated.

Architects, Surveyors, &c., will please be careful to specify in their schedules the style of closet required, by giving the No., and how many persons it is to accommodate, along with any other necessary information.

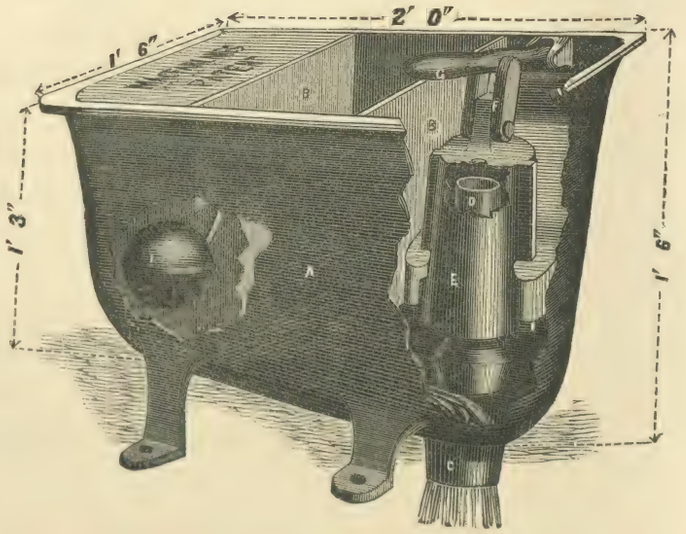
No. 1 WATER CLOSET RANGE *for Five Persons.*

Fig. 1.



No. 1 WATER CLOSET *for One Person.*

Fig. 43.



Prices, complete with brass water supply fittings, delivered in Glasgow.

For 1 Person,	£1	18	6	For 5 Persons,	£6	5	0
" 2 "	3	6	6	" 6 "	7	12	6
" 3 "	4	1	0	" 8 "	9	18	0
" 4 "	5	6	0	" 10 "	12	2	0

Fig. 1 represents a No. 1 WATER CLOSET RANGE for Five persons. The apparatus consists of an oblong trough A, in three compartments, the bottom being egg-shaped with an inclination towards the discharge end. The discharge apparatus compartment is separated from the rest of the trough by the sluice plate B, sufficient space being left between its under edge and the bottom of the trough, to allow the matters passing freely through to the discharge pipe; in the bottom of this compartment is the discharge pipe C, with socket valve and overflow waste pipe D, over the mouth of the latter is the effluvia trap E, all these, *i.e.* the socket valve, overflow waste pipe, and effluvia trap, being in one piece and connected to the upright link F, which again is acted on and wrought by the horizontal lever G, the whole being enclosed by the hinged cover and lock N, the discharge geering is thus only accessible to the person whose duty it is to discharge the contents. The water supply compartment is in like manner placed at the opposite end of the trough, and consists of sluice plate B, and float-ball and cock I, attached to the back of trough by means of a thimble, to the latter of which the supply pipe requires to be soldered, the whole being enclosed by cover fastened down by screws, the water supply geering is thus only accessible to a tradesman.

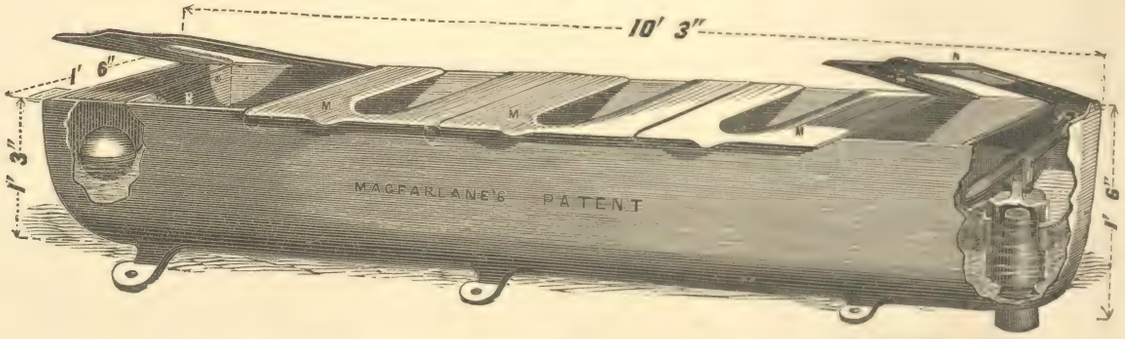
Fig. 43 represents a No. 1 WATER CLOSET for One person. The apparatus is in every respect the same as Fig. 1, but it has no cover nor lock on the discharge geering.

When the Water Closet is in operation, by lifting the lever G, you open the valve, and the whole contents rush off free and unimpeded to the sewer, when you let go the lever, the valve drops into its seat, and the trough refills of its own accord to the proper height. The operation of discharging the contents, only requires to be done once every day, and is the work of a few seconds.

No. 1 is our lowest priced style of Water Closet, it is in every respect the same in its constructive parts, and all that relates to the Water Closet proper, as our more expensive kinds, the difference in price arises entirely from the absence of seats, divisions, or other external attachments; these may be added to the closet of any form or material that may under the circumstances be considered most suitable for its intended situation.

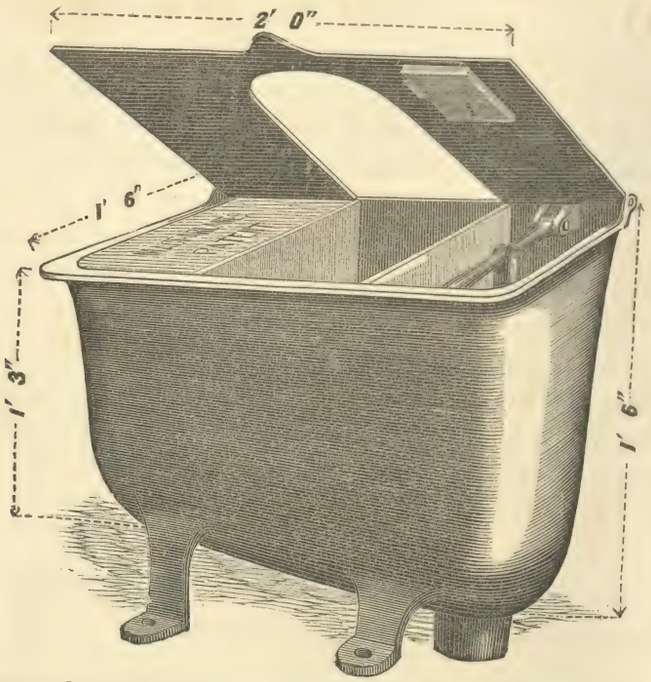
No. 2 WATER CLOSET RANGE *for Five Persons.*

Fig. 2.



No. 2 WATER CLOSET *for One Person.*

Fig. 4.



Prices, complete with brass water supply fittings, delivered in Glasgow.

For 1 Person,	£2	10	6	For 5 Persons,	£8	5	0
" 2 "	4	6	0	" 6 "	10	0	0
" 3 "	5	15	0	" 8 "	13	5	0
" 4 "	6	18	0	" 10 "	15	10	0

Fig. 2 represents a No. 2 WATER CLOSET RANGE for five persons, it is in every respect the same as No. 1, but it has iron seats M, hinged and covered with wood, with an oblong space in the centre clear to the back, thus giving a more open passage for the soil, and a degree of cleanliness not attainable by the usual oval opening. The discharge geering is enclosed by a portion of the end seat, to which is attached a lock as already described.

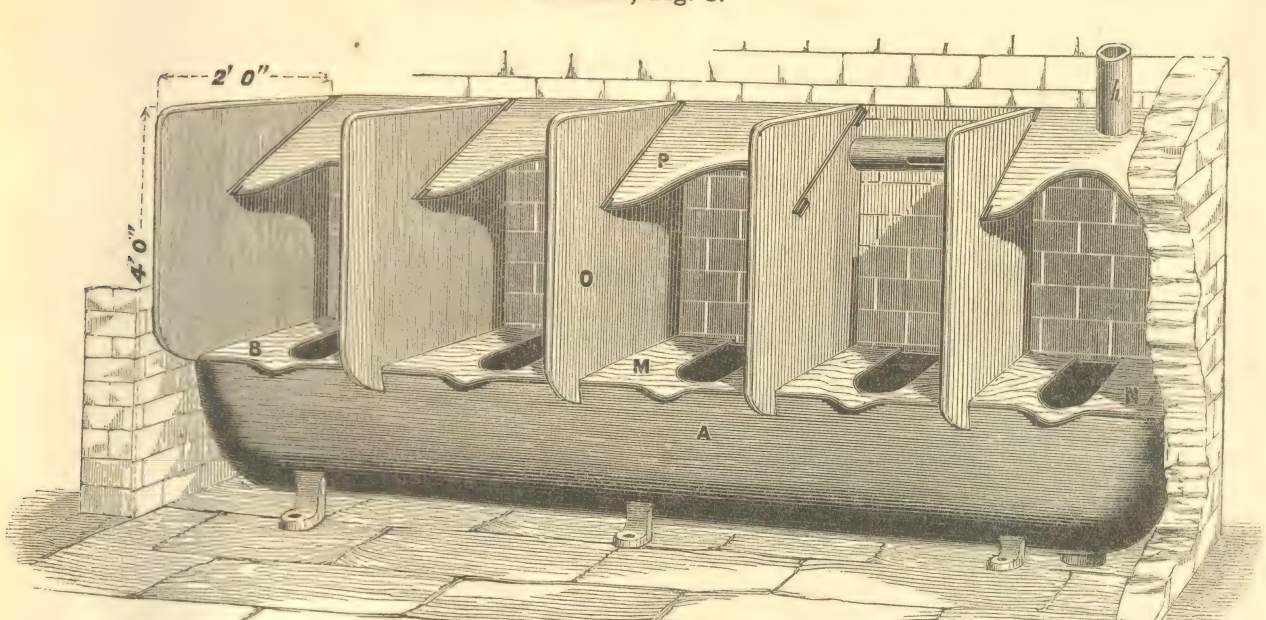
Fig. 4 represents a No. 2 WATER CLOSET for One person. The apparatus is in every respect the same as Fig. 2.

No. 2 WATER CLOSET RANGE is not much higher priced than the No. 1, whilst the shape and substantial construction of its seats offer great advantages for its adoption; a space of 1 inch is left between each seat so that partitions may be added, of the form and material most suitable for its intended situation.

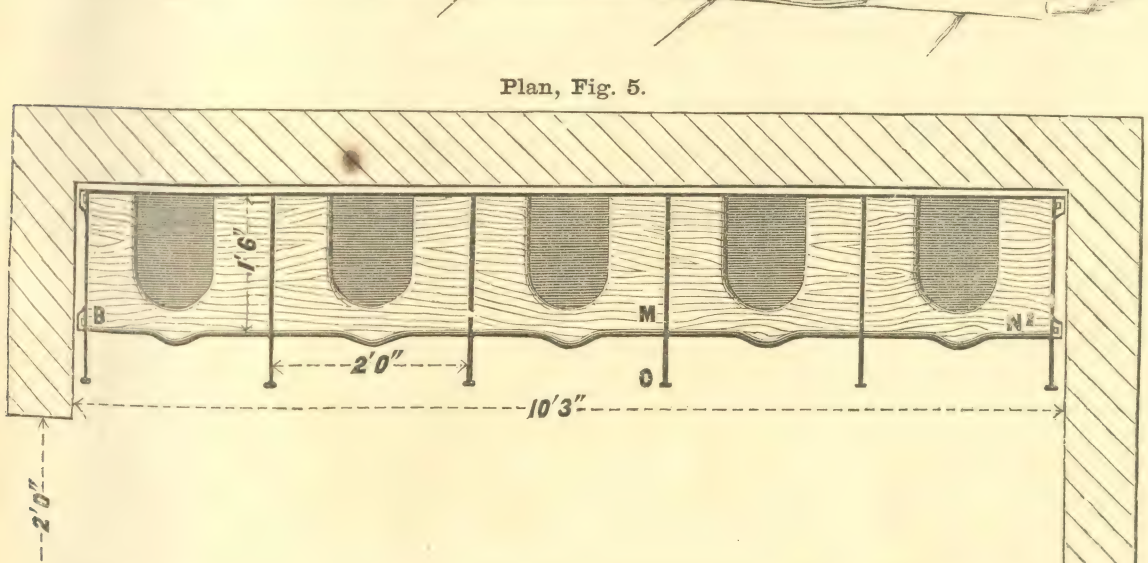
MACFARLANE'S PATENT.

No. 4 WATER CLOSET RANGE *for Five Persons.*

Elevation, Fig. 6.



Plan, Fig. 5.



Prices, complete with brass water supply fittings, delivered in Glasgow.

For 2 Persons,	£5	9	6	For 6 Persons,	£12	8	4
" 3 "	7	3	0	" 8 "	16	15	6
" 4 "	8	14	6	" 10 "	20	0	0
" 5 "	10	10	0				

Figs. 5 and 6 represent our No. 4 WATER CLOSET RANGE for Five Persons; it is in every respect the same as No. 2, Fig. 2, but each seat is separated by an iron partition O, and back-guard plate P, under which is an effluvia pipe *h*, having an opening above each seat, and communicating to the external atmosphere. The advantages of this arrangement are evident: the partition O gives privacy and comfort, whilst the back-guard plate P prevents any person from standing on the seats, and assists in conveying the effluvia given off from the person at each discharge, along the effluvia pipes to the external atmosphere.

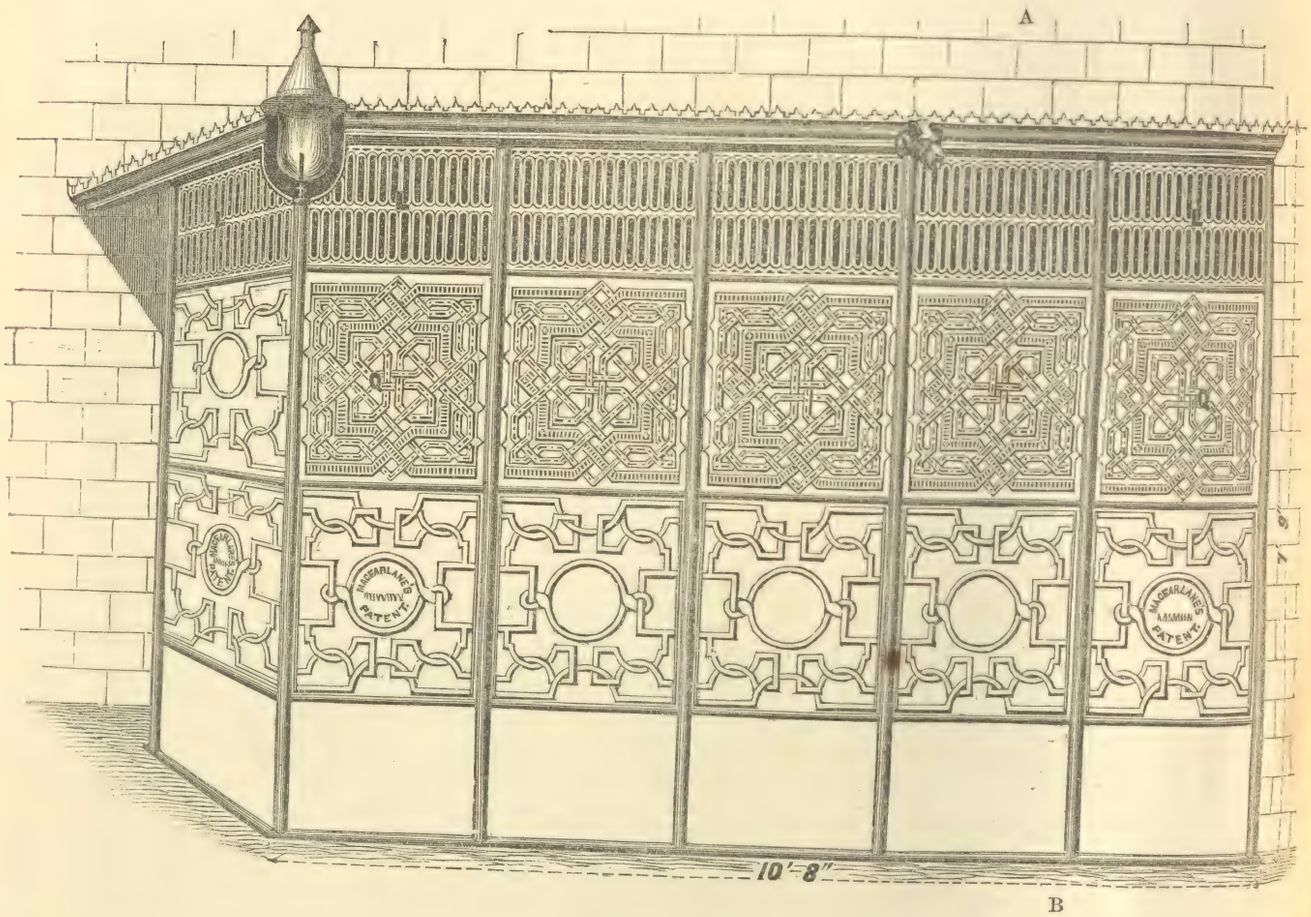
Our No. 1, 2, and 4 WATER CLOSET RANGES are intended to be fitted up in brick, stone, or wooden buildings. The above illustrations show the general arrangement, but we can alter them so as to meet the requirements of any case.

Scale, ½ inch—1 foot.

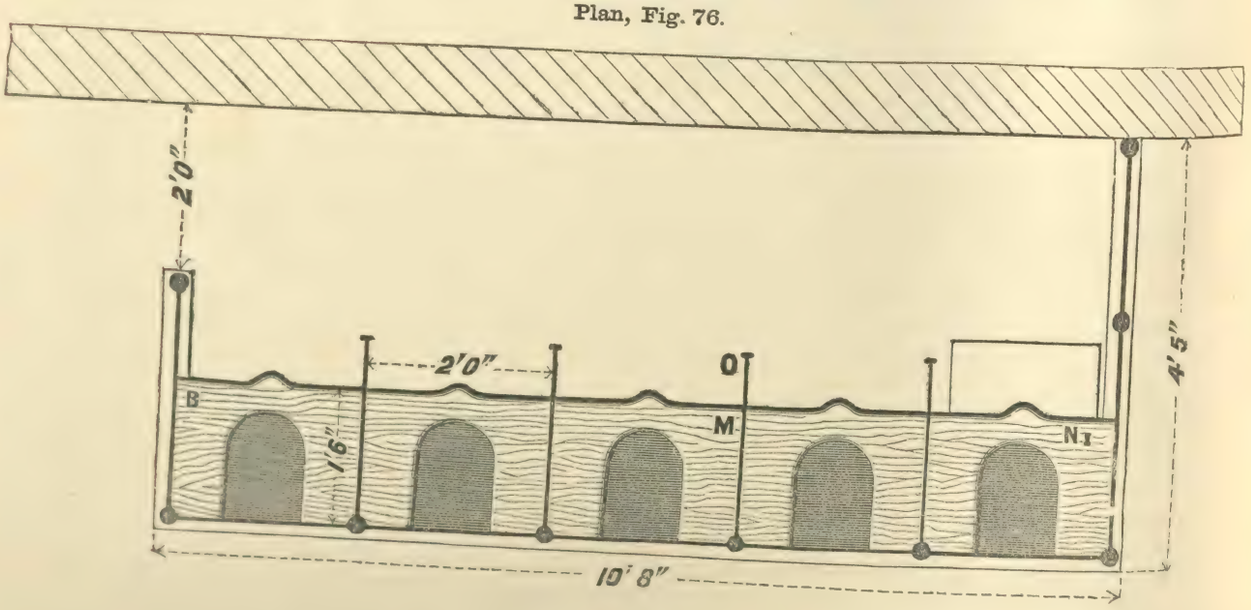
MACFARLANE'S PATENT.

No. 3 WATER CLOSET RANGE *for Five Persons.*

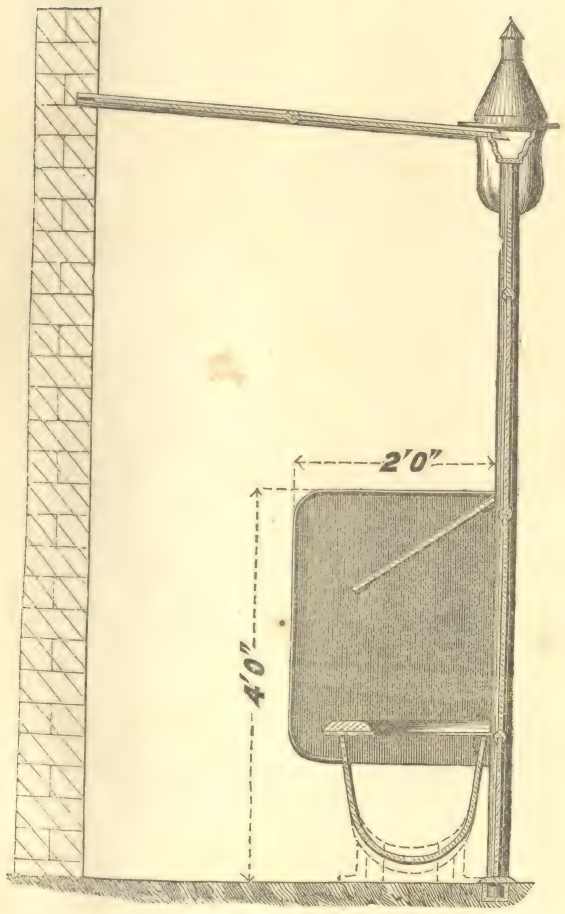
Elevation, Fig. 74.



Plan, Fig. 76.



Section through A B, Fig. 75.



Prices, complete, ready for fitting up, with brass water supply fittings, (exclusive of lamp and gas fittings,) delivered in Glasgow:—

For	2	Persons,	£12	7	6
"	3	"	16	0	0
"	4	"	19	5	0
"	5	"	22	7	6
"	6	"	26	5	0
"	8	"	33	7	0
"	10	"	40	10	0

Figs. 74, 75, and 76 represent our No. 3 WATER CLOSET RANGE for Five Persons; its interior arrangements are similar to No. 4. The front and end walls and roof, however, are wholly composed of ornamental cast iron plates and pillars, all dovetailed together, the whole structure being intended to be placed against a wall. One general entrance is at the end. When more than five seats are in one Range, an entrance is at both ends. It is lighted and ventilated from the sides, by the open fret work L, and perforated plates Q, and at night by gas lamp. No door is required for the entrance; but in situations where necessary a screen can be placed opposite the entrance.

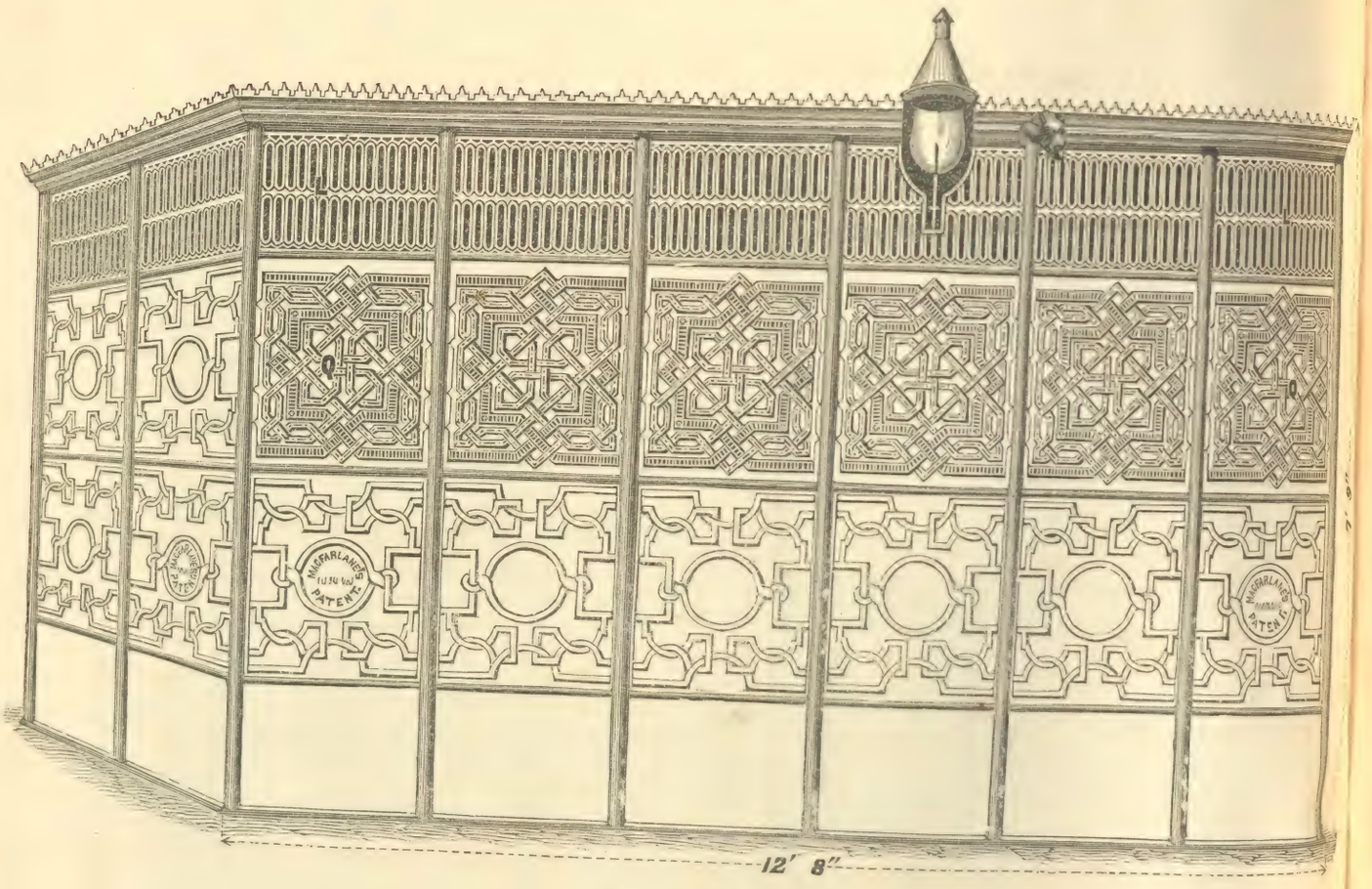
No. 3 WATER CLOSET RANGE has many advantages to recommend its adoption. The materials being cast iron, are in their nature indestructible, whilst the ventilation by means of the fret work and perforated plates produce a marvellous degree of freshness, and entire freedom from smell.

Scale, ½ inch—1 foot.

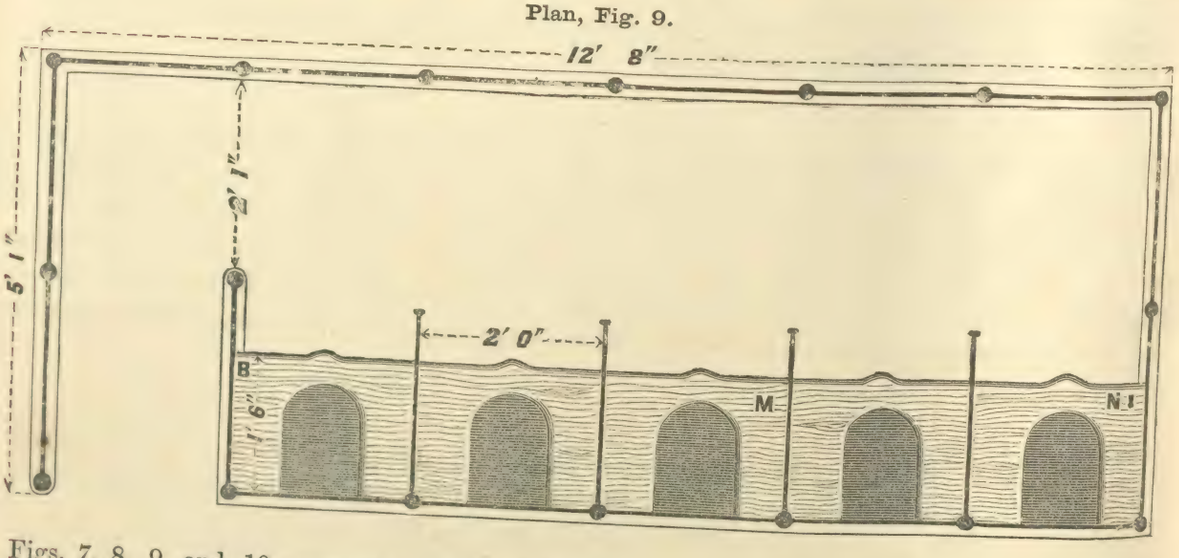
MACFARLANE'S PATENT.

No. 5 WATER CLOSET RANGE *for Five Persons.*

Back Elevation, Fig. 7.



Plan, Fig. 9.

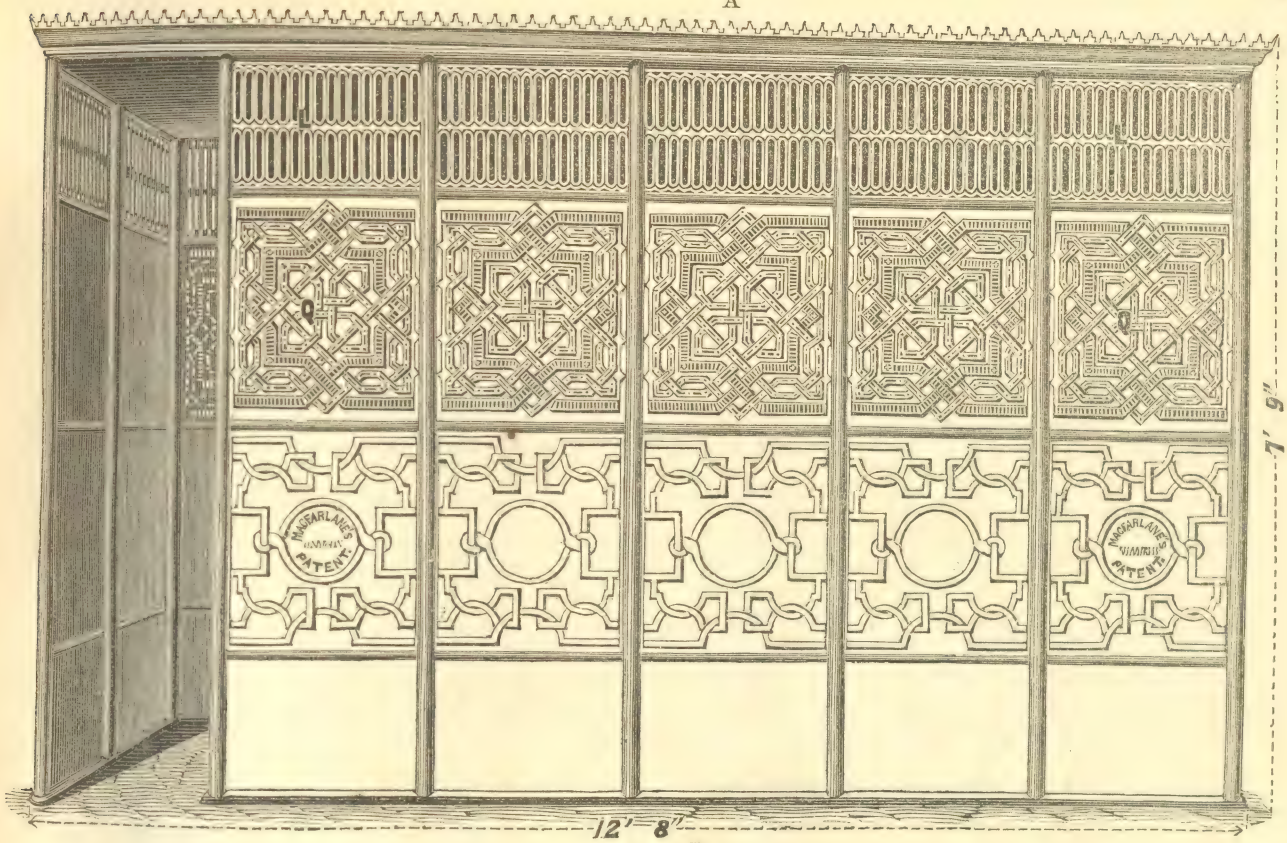


Figs. 7, 8, 9, and 10 represent our No. 5 WATER CLOSET RANGE for Five Persons: its interior arrangements are the same as No. 3; but instead of being fitted up against a wall, the whole structure is complete in itself, and wholly composed of cast iron. One general entrance is at the end. When more than five seats are in one Range, an entrance is at both ends. The open fret work L, and perforated plates Q, give light and ventilation to the interior, whilst the lamp lights it at night.

No. 5 WATER CLOSET RANGE is well adapted for situations where it is desirable to be unconnected with the adjacent buildings; the chaste and unobtrusive character of the structure adapts it for any situation, without detracting from the amenity of the surrounding objects.

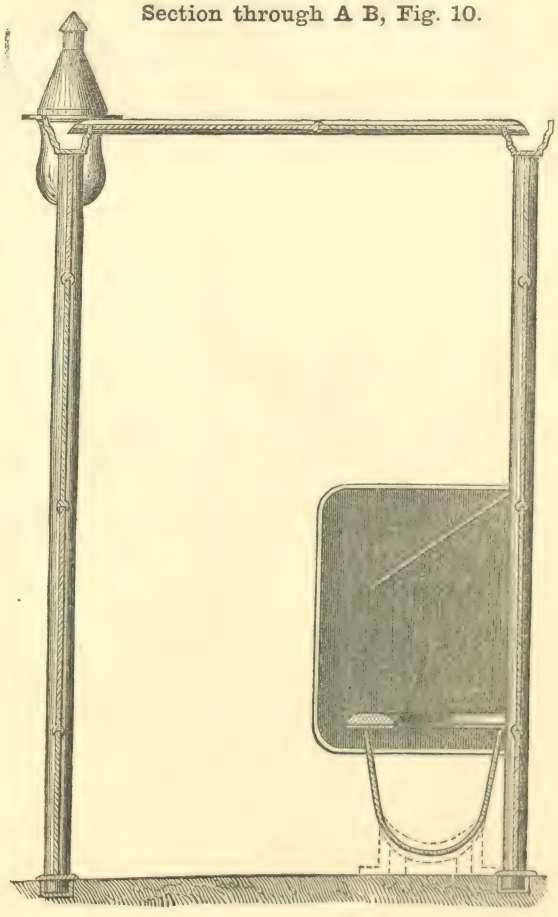
Front Elevation, Fig. 8.

A



B

Section through A B, Fig. 10.



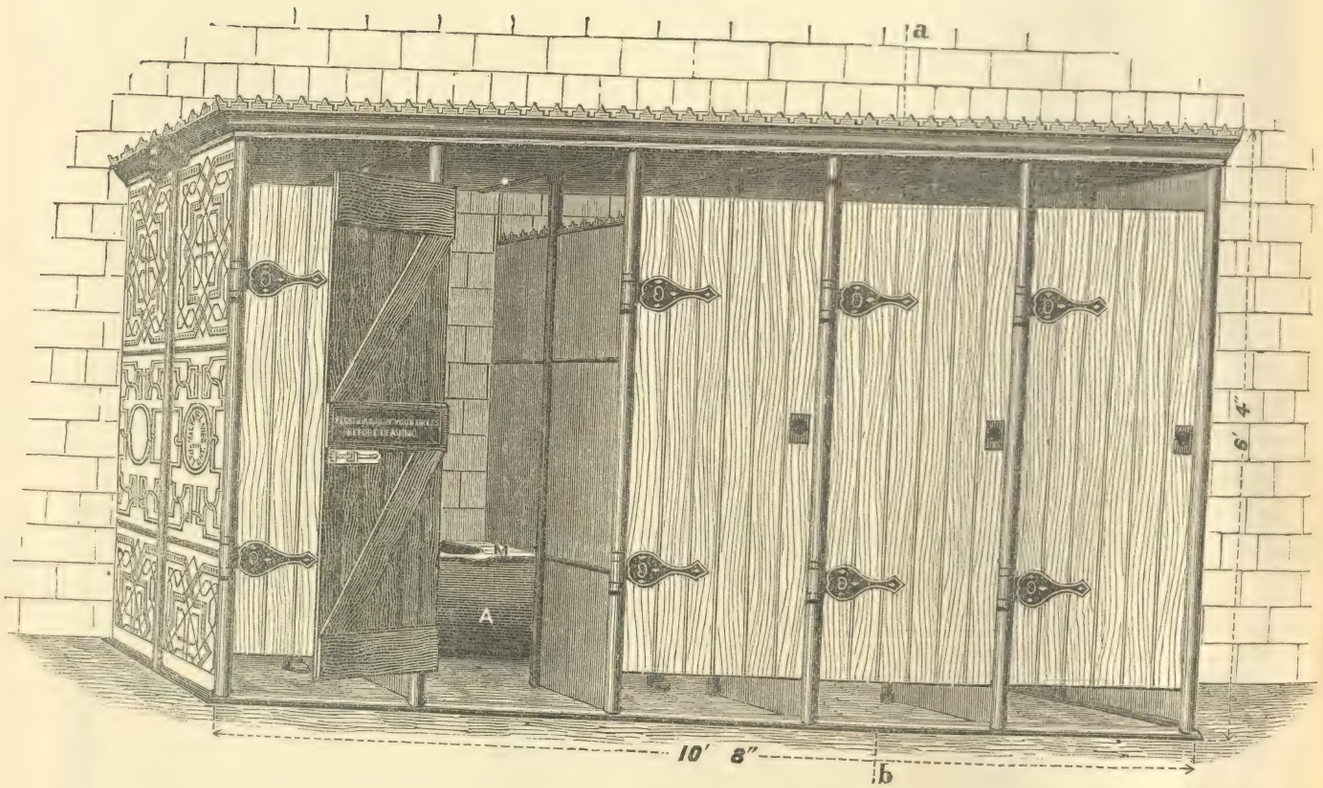
Prices, complete, ready for fitting up, with brass water supply fittings, (exclusive of lamp and gas fittings,) delivered in Glasgow :—

For 3 Persons,	£27	5	6
" 4 "	32	4	6
" 5 "	37	15	0
" 6 "	46	5	0
" 8 "	57	5	0
" 10 "	68	10	0

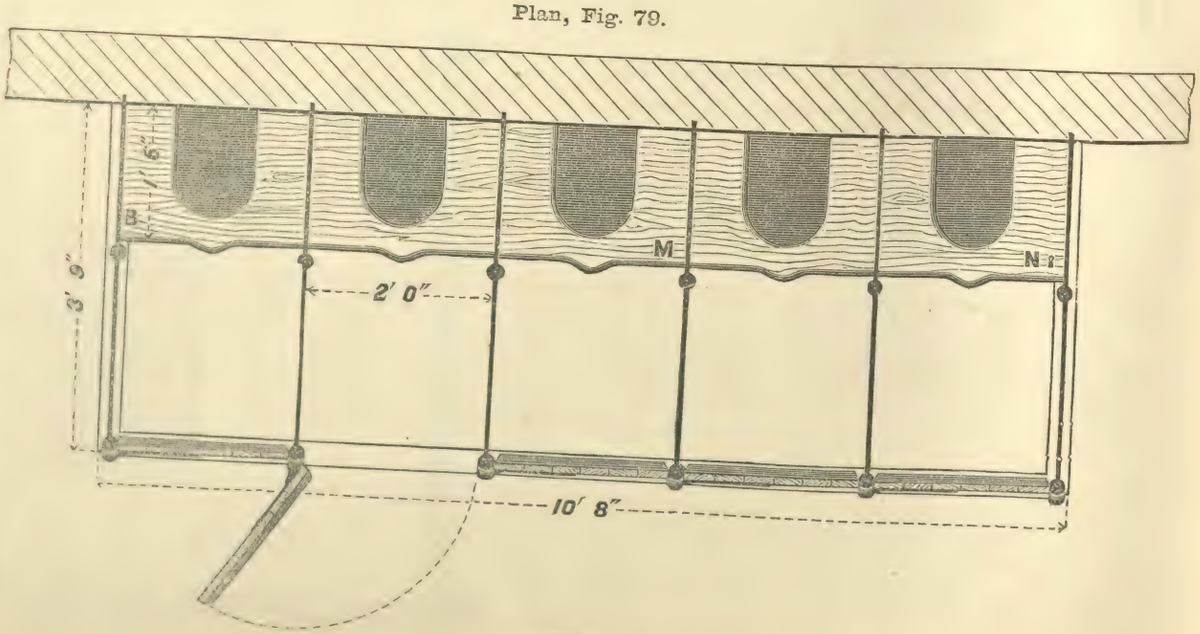
Scale, ½ inch—1 foot.

No. 6 WATER CLOSET RANGE *for Five Persons.*

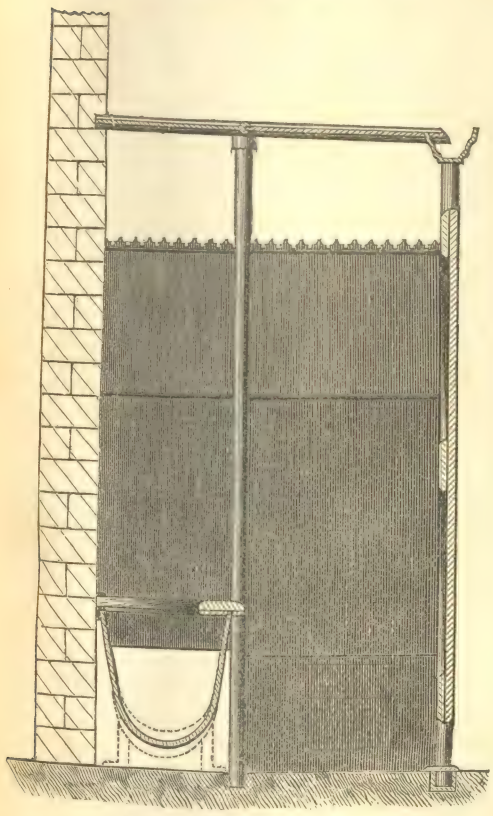
Elevation, Fig. 77.



Plan, Fig. 79.



Section through **A B, Fig. 78.**



Prices, complete, ready for fitting up, with brass water supply fittings, delivered in Glasgow:—

For 1 Person,		£7	18	6
" 2	"	12	17	0
" 3	"	16	17	0
" 4	"	21	0	0
" 5	"	25	5	6
" 6	"	29	9	0
" 8	"	38	2	0
" 10	"	46	10	0

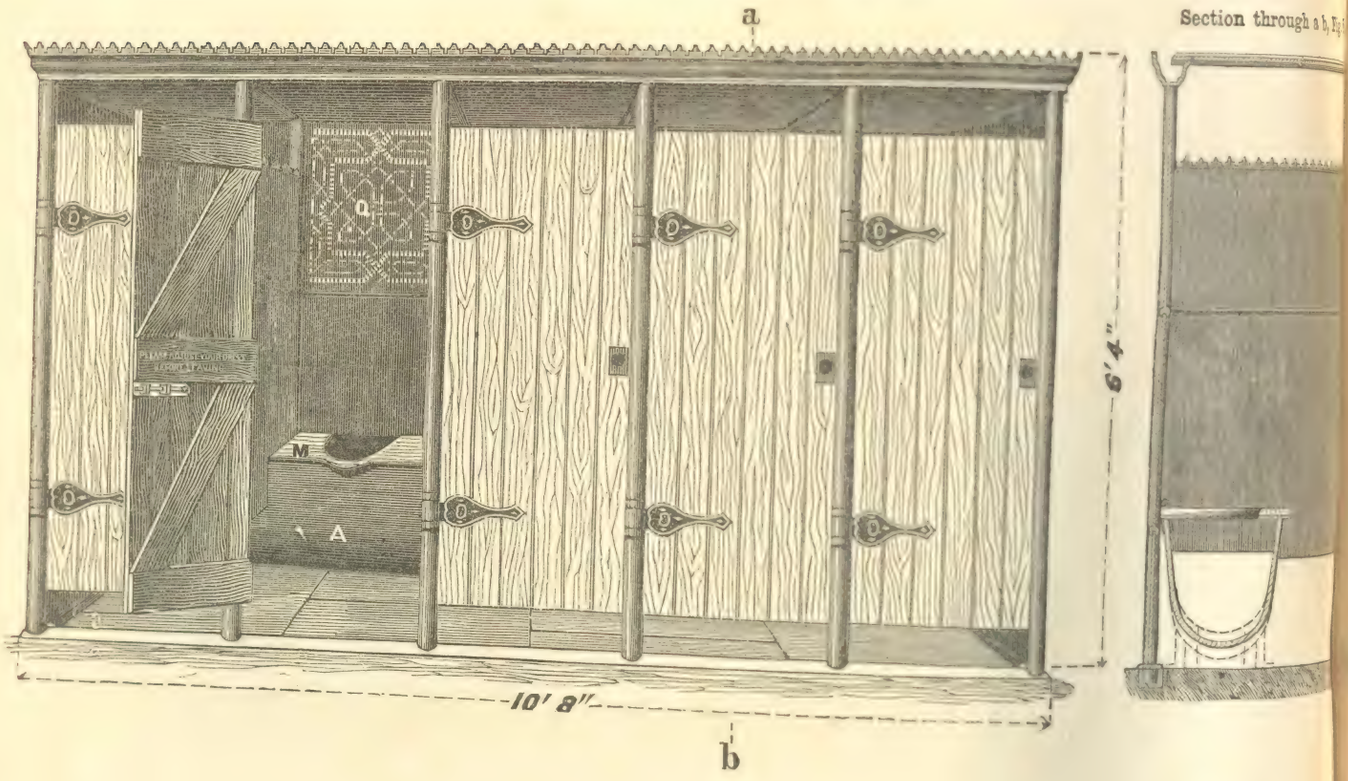
Figs. 77, 78, and 79, represent our No. 6 WATER CLOSET RANGE for Five Persons. It is divided into compartments, each having a separate door. The partition walls and roof are wholly composed of cast iron plates and pillars, all dovetailed together, the whole structure being intended to be placed against a wall.

No. 6 Water Closet Range will be found particularly suitable for Schools, &c. Its moderate price, substantiality, and the little room it occupies, are all features that are worthy the consideration of public institutions.

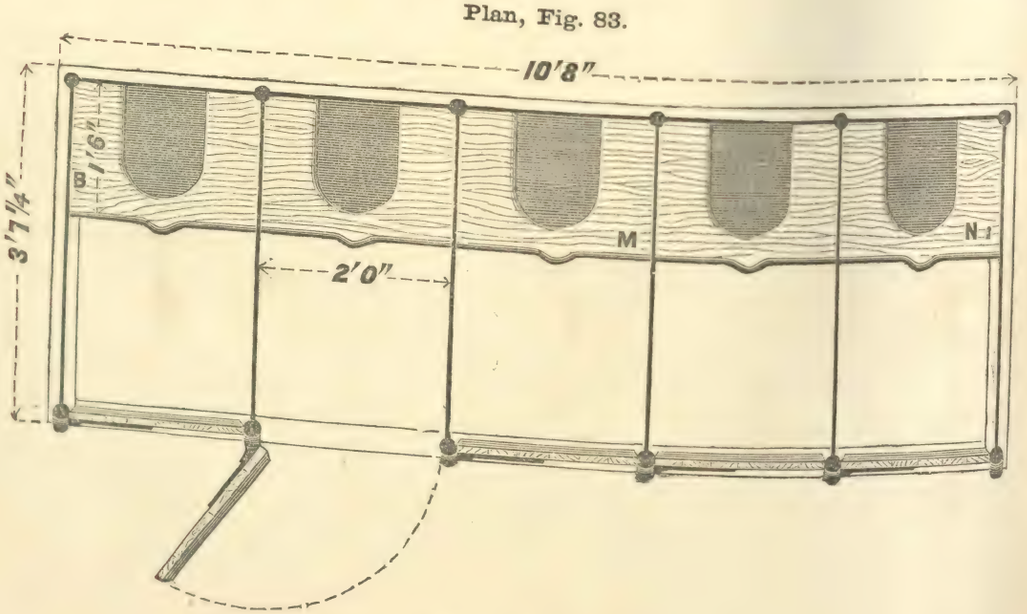
Scale, ½ inch—1 foot.

No. 9 WATER CLOSET RANGE *for Five Persons.*

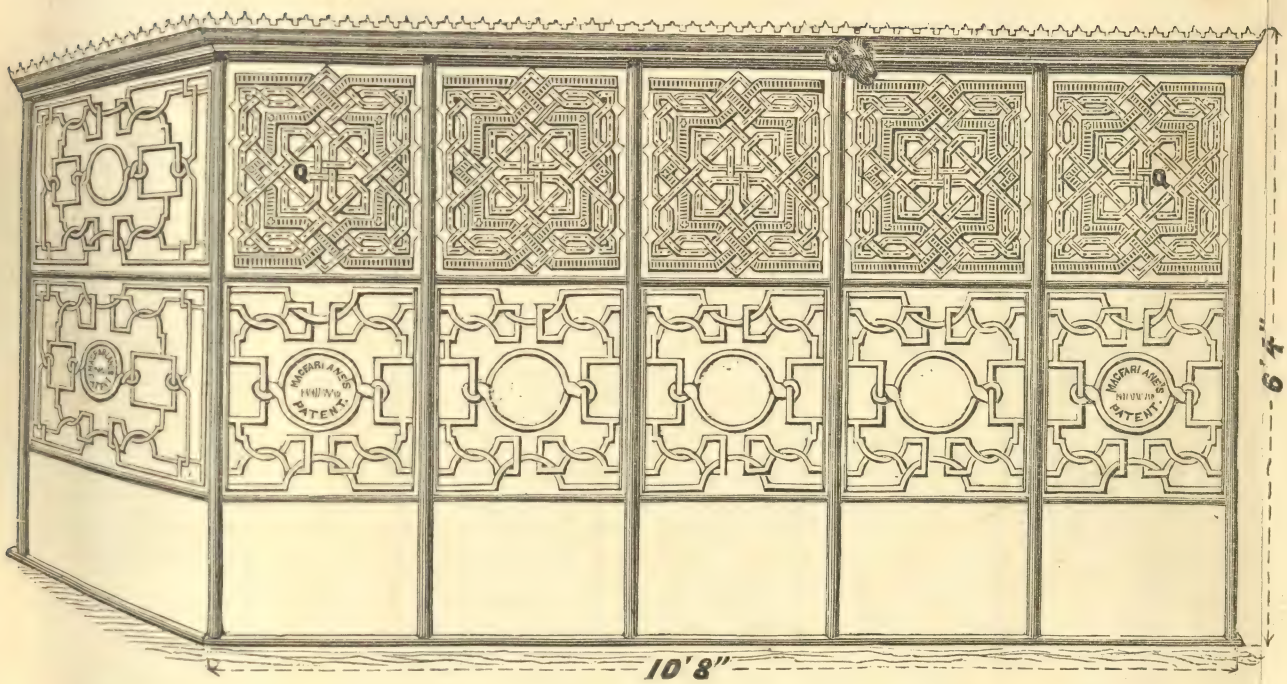
Front Elevation, Fig. 80.



Plan, Fig. 83.



Back Elevation—Fig. 82.



Prices, complete, ready for fitting up, with brass water supply fittings, delivered in Glasgow:—

For 1 Person,	£9	2	6	For 5 Persons,	£29	9	0
" 2 "	14	14	0	" 6 "	34	6	6
" 3 "	19	12	0	" 8 "	45	8	6
" 4 "	24	9	0	" 10 "	54	5	6

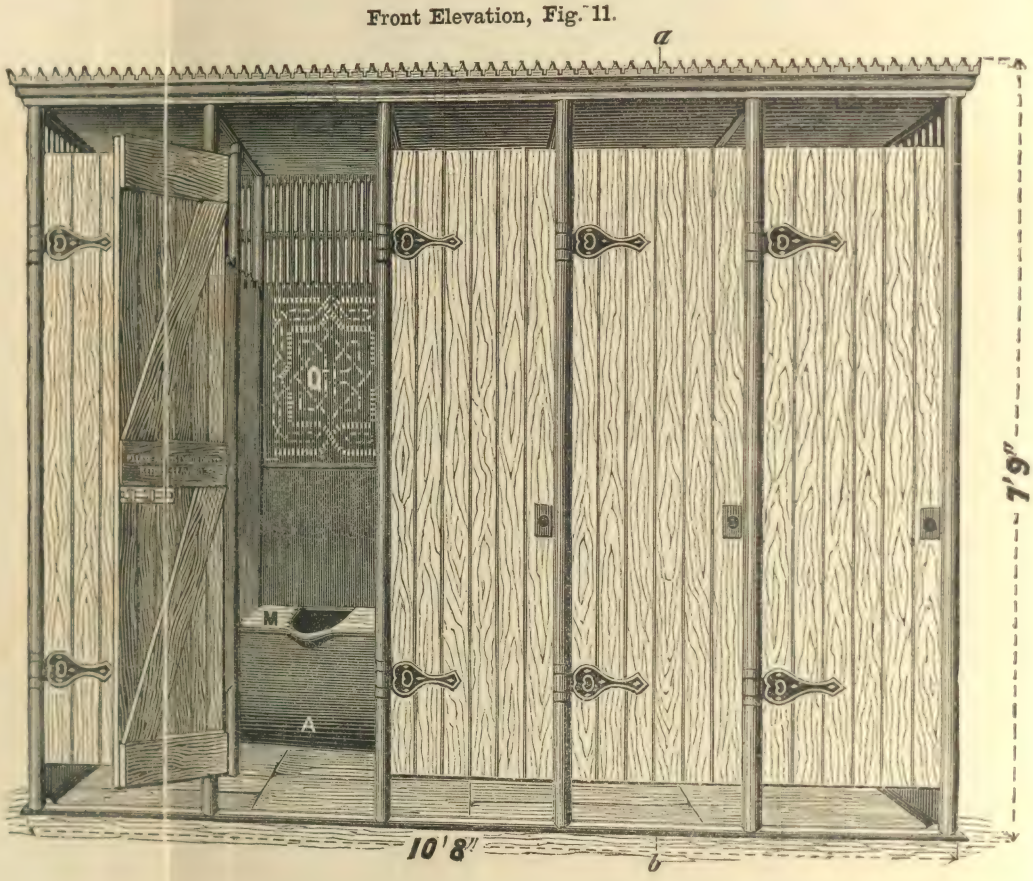
Figs. 80, 81, 82, and 83 represent our No. 9 WATER CLOSET RANGE for Five persons. Its interior arrangements are the same as No. 6; but instead of being fitted up against a wall, the whole structure is complete in itself, and is wholly unconnected with the adjacent buildings.

Scale, ½ inch,—1 foot.

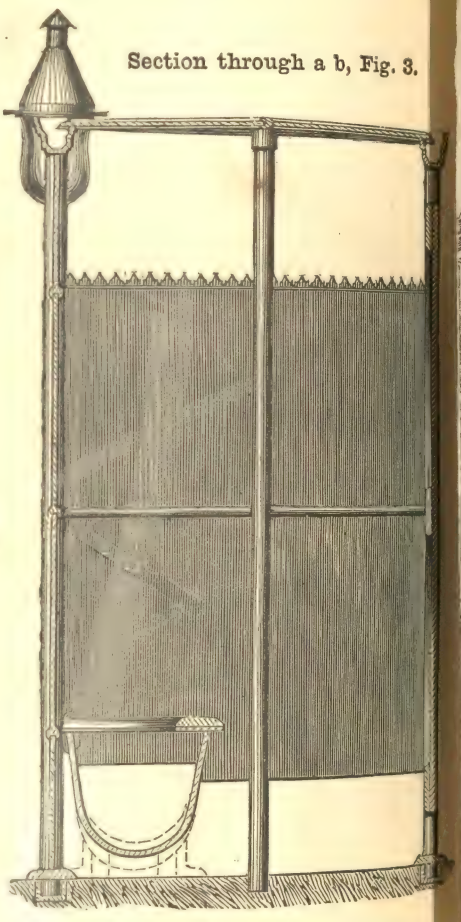
MACFARLANE'S PATENT.

No. 7 WATER CLOSET RANGE *for Five Persons.*

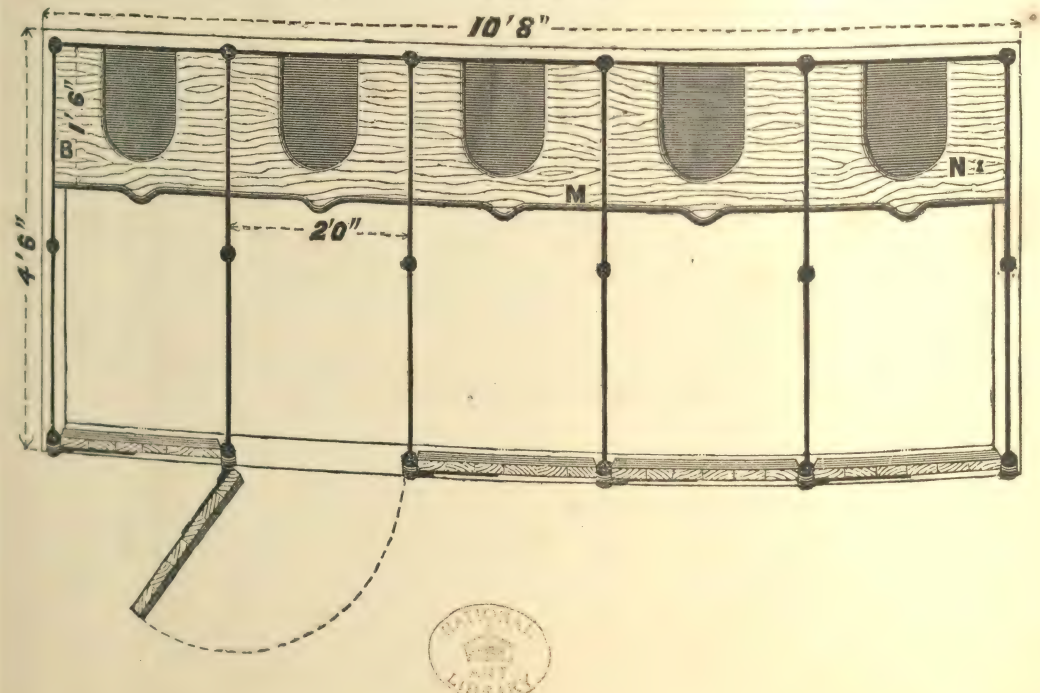
Front Elevation, Fig. 11.



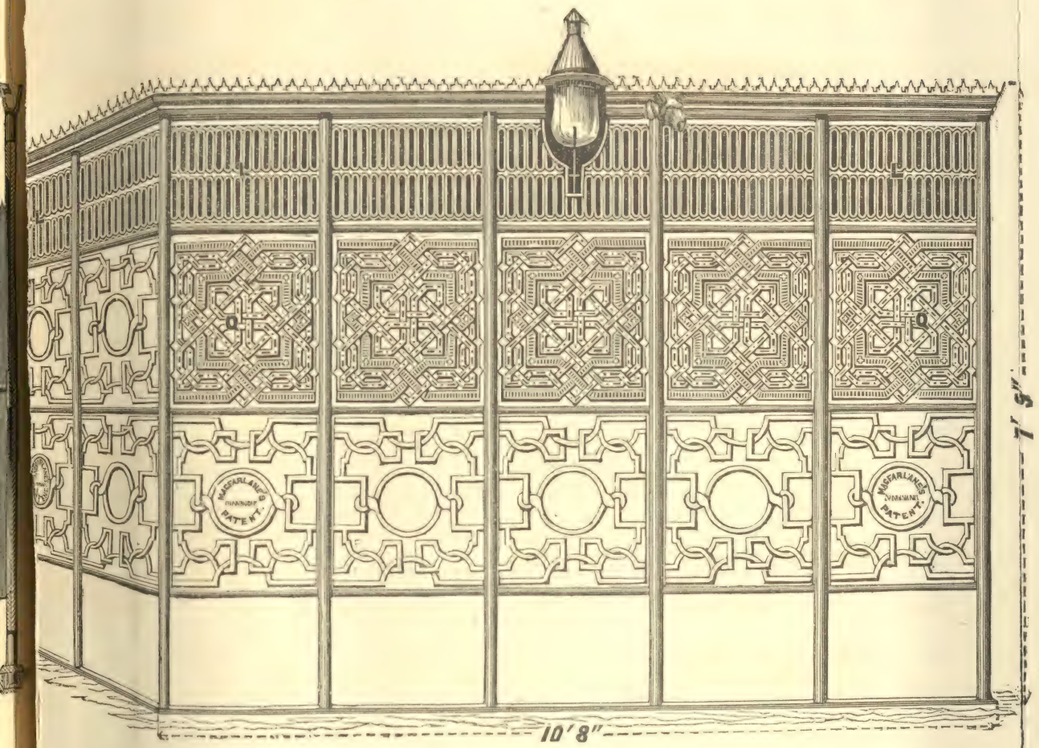
Section through a b, Fig. 3.



Plan, No. 13.



Back Elevation, Fig. 24.



Prices, complete, ready for fitting up, with brass water supply fittings, (but exclusive of lamp and gas fittings,) delivered in Glasgow:—

1 Person,	£10	18	6	For 5 Persons,	£36	15	6
"	18	15	6	" 6 "	43	5	0
"	24	5	0	" 8 "	56	0	0
"	30	8	6	" 10 "	68	15	6

Figs. 3, 11, 13, and 24, represent our No. 7 WATER CLOSET RANGE for Five Persons. Its arrangements are the same as No. 9, but more room is allowed in each compartment, and the height is 7 feet 9 inches.

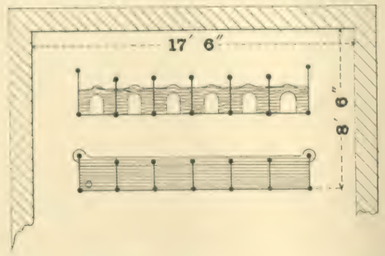
No. 7 Water Closet Range is particularly suitable for situations where it is desirable to be unconnected with the adjacent buildings. The chaste and unobtrusive character of the structure adapts it for almost any situation, without detracting from the amenity of the surrounding objects.

Scale, ½ inch,—1 foot.

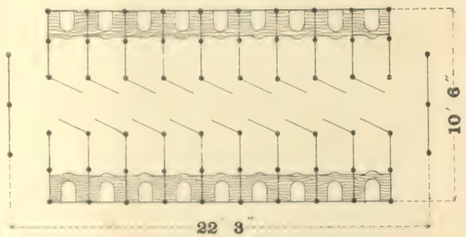
MACFARLANE'S

EXAMPLES, *showing various modes of arranging Closets and Urinals.*

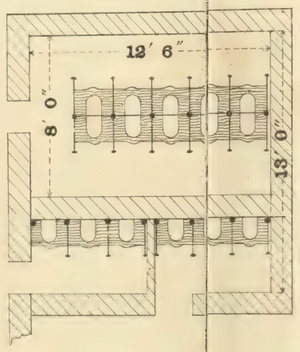
Closets for 6 Persons, and Urinals for 6 Persons. Fig. 150.



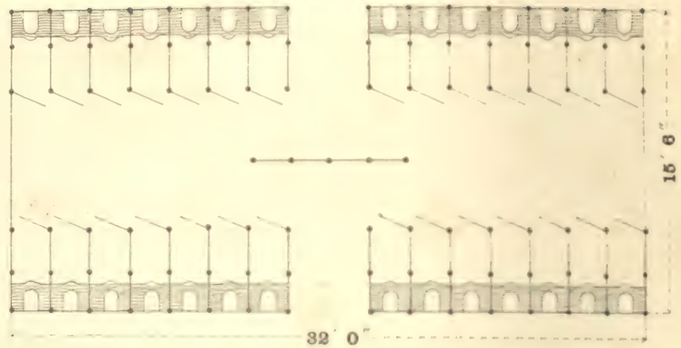
Closets for 18 Persons. Fig. 151.



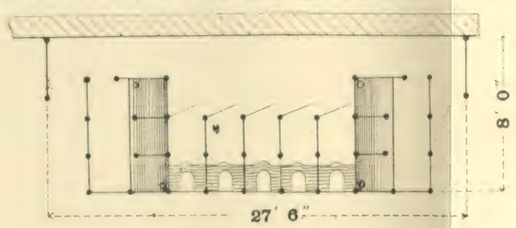
Closets for 16 Persons. Fig. 152.



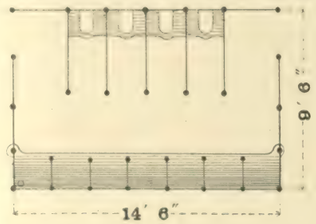
Closets for 28 Persons. Fig. 153.



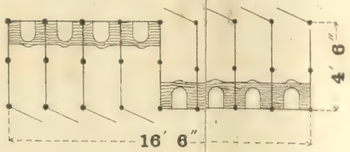
Closets for 5 Persons, and Urinals for 6 Persons. Fig. 154.



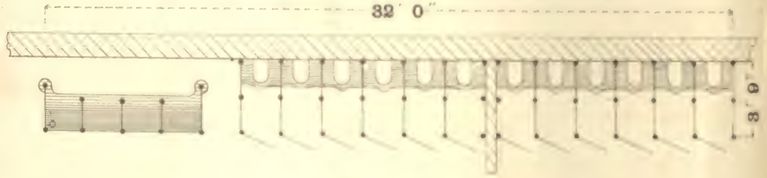
Closets for 4 Persons, and Urinals for 7 Persons. Fig. 155.



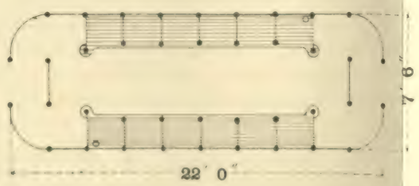
Closets for 8 Persons. Fig. 156.



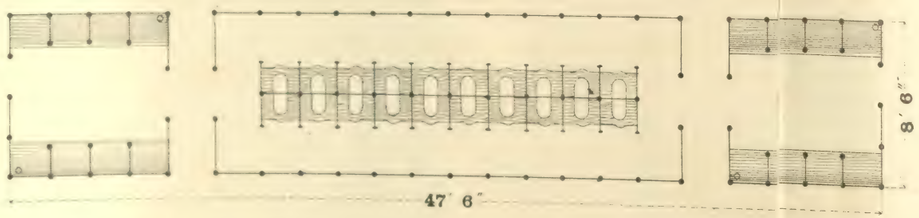
Closets for 12 Persons, and Urinals for 4 Persons. Fig. 157.



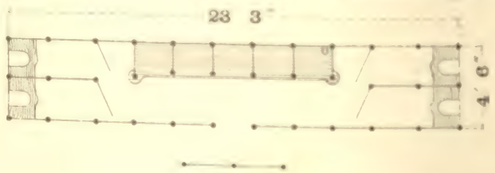
Urinals for 12 Persons. Fig. 158.



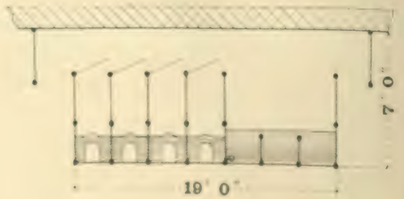
Closets for 20 Persons, and Urinals for 16 Persons. Fig. 159.



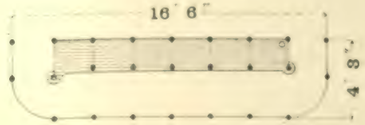
Closets for 4 Persons, and Urinals for 5 Persons. Fig. 160.



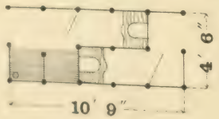
Closets for 4 Persons, and Urinals for 3 Persons. Fig. 161.



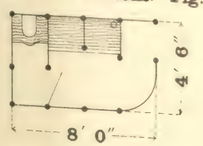
Urinals for 6 Persons. Fig. 162.



Closets for 2 Persons, and Urinals for 2 Persons. Fig. 163.

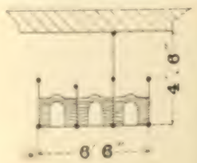


Closet for 1 Person, and Urinals for 2 Persons. Fig. 164.



Closet for 1 Person, and Urinal for 1 Person. Fig. 165.

Closets for 3 Persons. Fig. 166.



Scale, $\frac{1}{8}$ inch = 1 foot.

PART VI.

ORDURE CLOSETS.

Long-continued observation and experience have demonstrated to us the desirableness of collecting excrementary refuse, in such a way as to save the soil to the community, preventing the pollution of rivers, and at the same time maintaining the sanitary laws of health. To accomplish these objects, the public individually must take a warm interest in their realization, and thus strengthen the hands of the local authorities.

Our ORDURE CLOSETS meet the general requirements of the great mass of the people. Their first cost is trifling, being simple and imperishable in their construction, they entail no after expense for repairs; the collections are removed daily, thereby keeping our rivers free from pollution; requiring neither water nor drains, and conforming in every respect with the soundest sanitary laws. In every well-regulated community the arrangement and supervision of such matters naturally rest with the local authorities, to them the people look for guidance as to what arrangements are best suited for the general wants, and to them we look for assistance in introducing our Ordure Closet system. They have been tested under the most trying circumstances for the last three years, in the most densely populated parts of Glasgow, where upwards of thirty thousand of the population are now wholly accommodated by them; and we refer with pleasure to the following testimonial in their favour—

From JOHN CARRICK, ESQ., *Architect, and Superintendent of Works for the City of Glasgow.*

STREETS AND BUILDINGS DEPARTMENT, SOUTH ALBION STREET,
GLASGOW, 19*th September*, 1861.

MESSRS. WALTER MACFARLANE & CO.

GENTLEMEN,—With reference to the Certificate I gave in 1855, as to the perfect suitability of your Public Water Closets and Urinals, I beg to state that the experience of the last five years fully confirms me in the opinion I then expressed.

Your Iron Ordure Closets and Refuse Bins which you have recently fitted up in various Closes, &c., in this City with the sanction of, and under the direction of the Local Authority appointed under the Nuisance Removal (Scotland) Act, affords the most perfect sanitary arrangements for promoting cleanliness and comfort to the masses who inhabit the densely built portions of our City, and goes a great way, in my opinion, to solve the difficulty as to the best means of utilizing the soil of large towns, and preserving the purity of our rivers and streams.

I am, Gentlemen, your obedient Servant,

JOHN CARRICK.

The following pages illustrate our various kinds of Ordure Closets, any of which, however, can be so modified as to suit particular circumstances and situations. All the Ordure Closets we have erected, under the direction of the local authorities in Glasgow, have accommodation for males in one end, and for females and children in the opposite end. See page 32, Fig. 166, for ground plan of this arrangement, along with other examples, showing various combinations.

On receiving a rough plan of the proposed site, with adjacent buildings, and probable number of persons to be accommodated, we shall be glad to furnish (free of charge) a ground plan of the arrangements we would suggest for adoption.

Architects' schedules should specify the description of Ordure Closet, by giving the Number, and how many persons are to be accommodated, also whether for males or females, along with any other special requirements.

No. 12 ORDURE CLOSET.

Fig. 84.

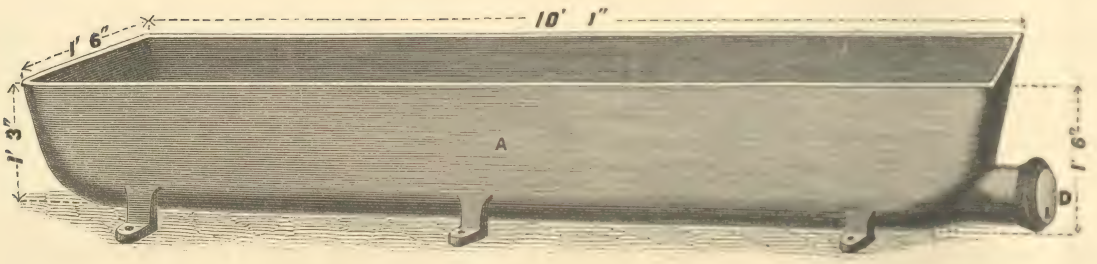
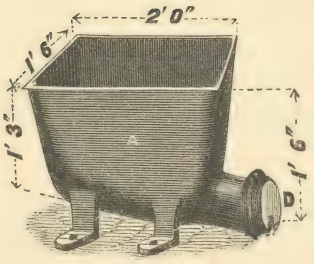


Fig. 85.



Prices, complete, delivered in Glasgow:—

For 1 Person,		£1	14	0
" 2	"	3	0	0
" 3	"	3	17	6
" 4	"	5	0	0
" 5	"	6	1	0
" 6	"	7	4	6
" 8	"	9	8	0
" 10	"	11	10	6

Fig. 84 represents a No. 12 ORDURE CLOSET RANGE for Five Persons. The apparatus consists of an oblong trough A, the bottom of which is egg-shaped, with an inclination towards the discharge end; the discharge apparatus consists of an inclined pipe projecting from the deep end of the trough to the outside of the building; on the end of this pipe is a discharge valve, D, hinged and fitted with lock, the geering is thus only at the command of the person whose duty it is to discharge the contents.

When in operation, and requiring to be emptied, place the bucket illustrated at page 48 under the valve, as shown at page 35, Fig. 110, then open the same, and the contents will fall into the bucket, draw forward with the Ordure Scraper, (illustrated at page 48,) any of the more solid parts resting on the bottom of the trough. The operation of discharging the contents only requires to be done once every day, and is the work of a few minutes.

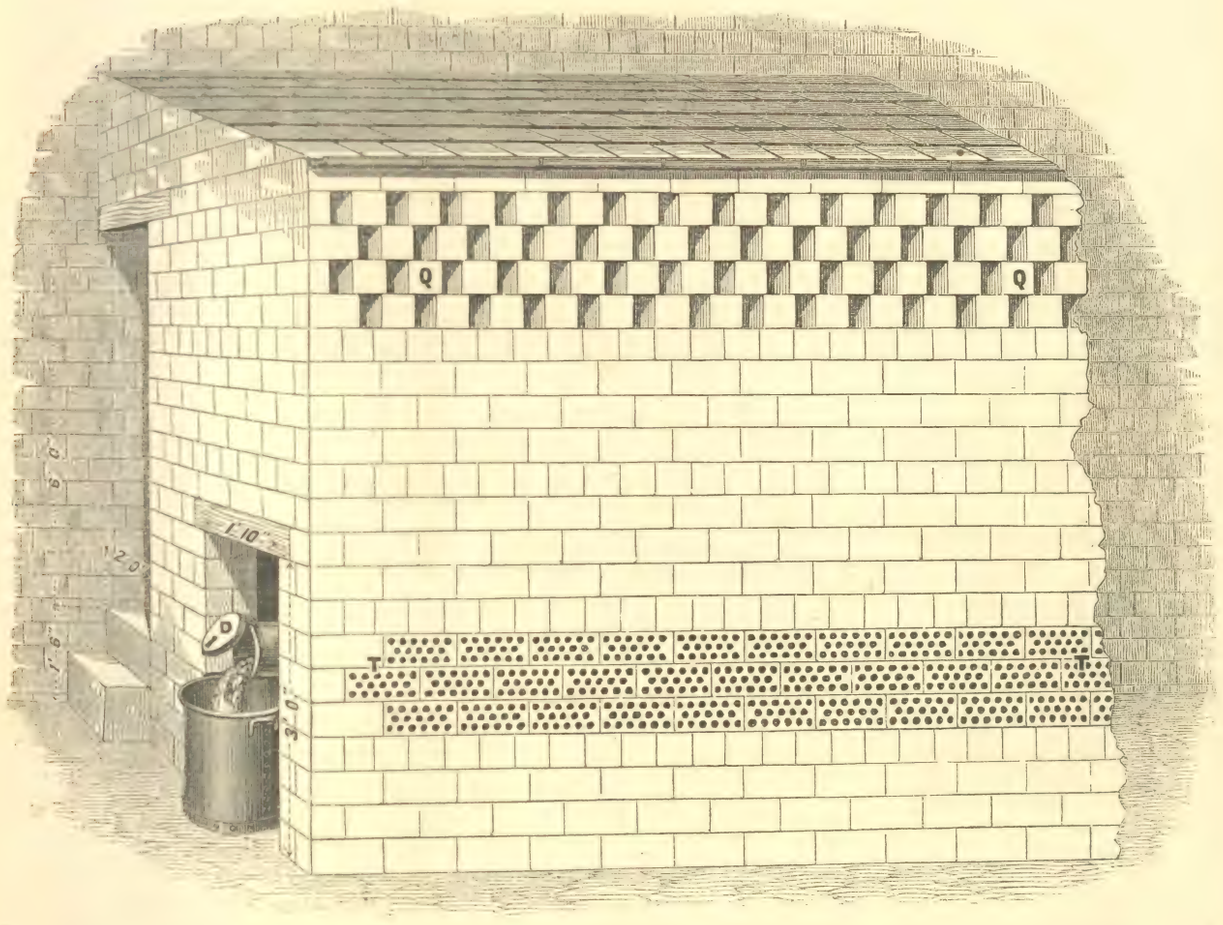
Fig. 85 represents a No. 12 ORDURE CLOSET for One Person, the apparatus being in every respect the same as Fig. 84.

No. 12 is our lowest priced style of Ordure Closet; is in every respect the same in its construction as our more expensive kinds, the difference in price arises entirely from the absence of seats, divisions, or other external attachments.

Scale, ½ inch—1 foot.

Nos. 12, 13, and 14 ORDURE CLOSETS are intended for being fitted up in brick buildings. In the erection of such, little or no efforts have been made to improve their construction, with the view of doing so, we submit for consideration the following improved brick erection.

Fig. 110.

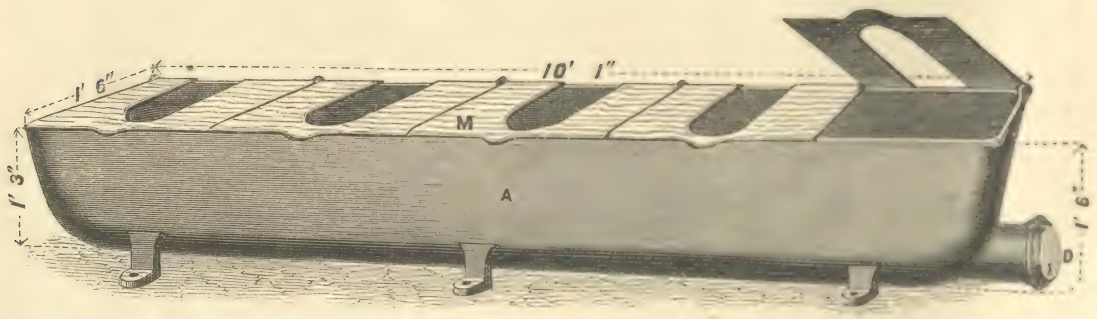


The interior pavement is 18 inches above the ground, is approached by means of a step on the outside; the walls are 9 inches thick, having three rows of perforated bricks immediately behind the closet trough, commencing from the floor, whilst four rows of open brick work near the roof gives light and ventilation; the discharge valve, D, of Ordure Closet, projects through the opening in the end; the cut represents the Closet in the act of being discharged into the ordure bucket. It cannot be too well impressed on the public, that the direct rays of light are of vital importance to the freshness of such erections, and should not be obstructed by panes of glass; these remarks apply to Water Closets as well as to Ordure Closets.

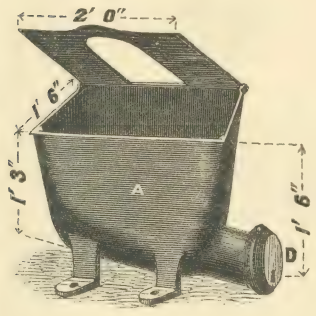
Scale, ½ inch—1 foot.

No. 13 ORDURE CLOSET RANGE *for Five Persons.*

Fig. 86.



For 1 Person, Fig. 87.



Prices, complete, delivered in Glasgow:—

For	1	Person,	£2	0 0
"	2	"	3	9 0
"	3	"	4	13 6
"	4	"	6	1 6
"	5	"	7	0 0
"	6	"	8	15 6
"	8	"	11	9 0
"	10	"	14	2 6

Fig. 86 represents a No. 13 ORDURE CLOSET RANGE for Five Persons. Is in every respect the same as No. 12, but has iron seats, M, hinged and covered with wood, with an oblong space in the centre, clear to the back, thus giving a more open passage for the soil, and a degree of cleanliness not attainable by the usual oval opening.

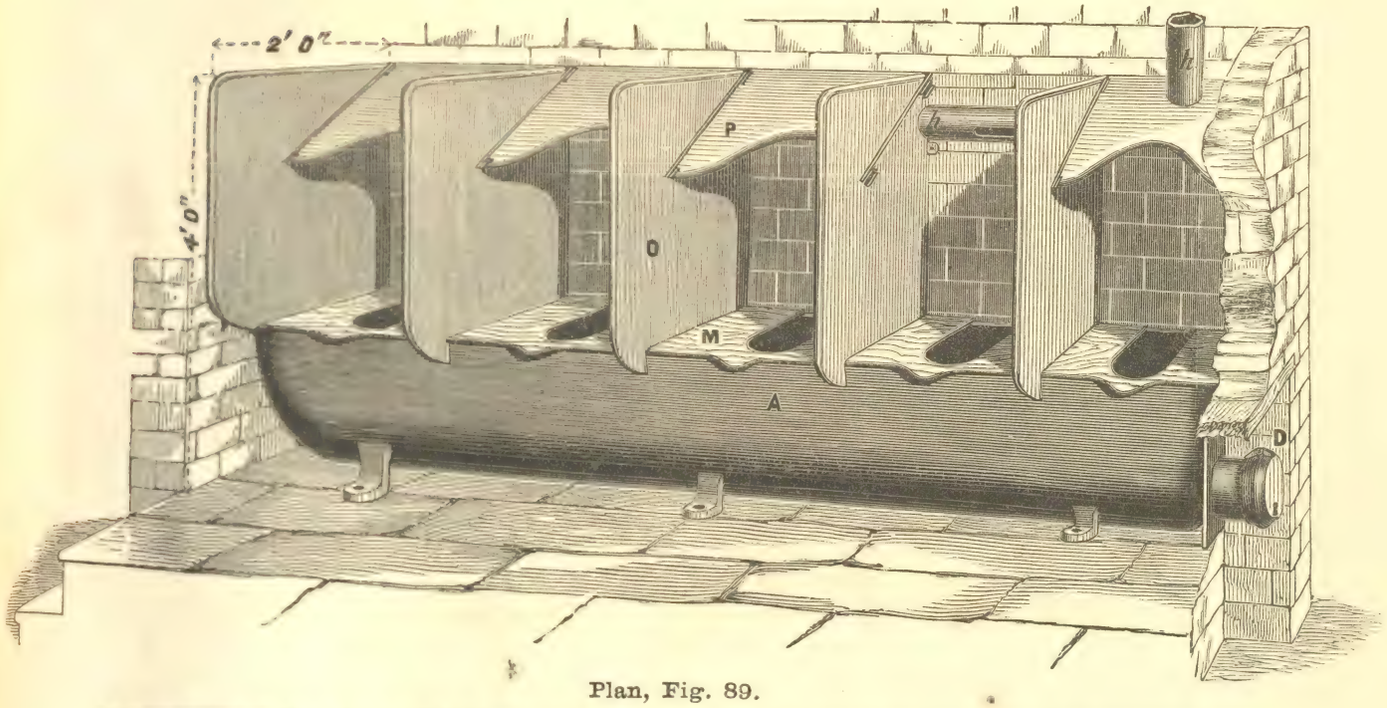
Fig. 87 represents a No. 13 ORDURE CLOSET for One Person. The apparatus is in every respect the same as Fig. 86.

No. 13 Ordure Closet Range is not much higher in price than No. 12, whilst the shape and substantial construction of the seats offer advantages for its adoption. A space of 1 inch is left between each seat, so that partitions may be added, of any form or material.

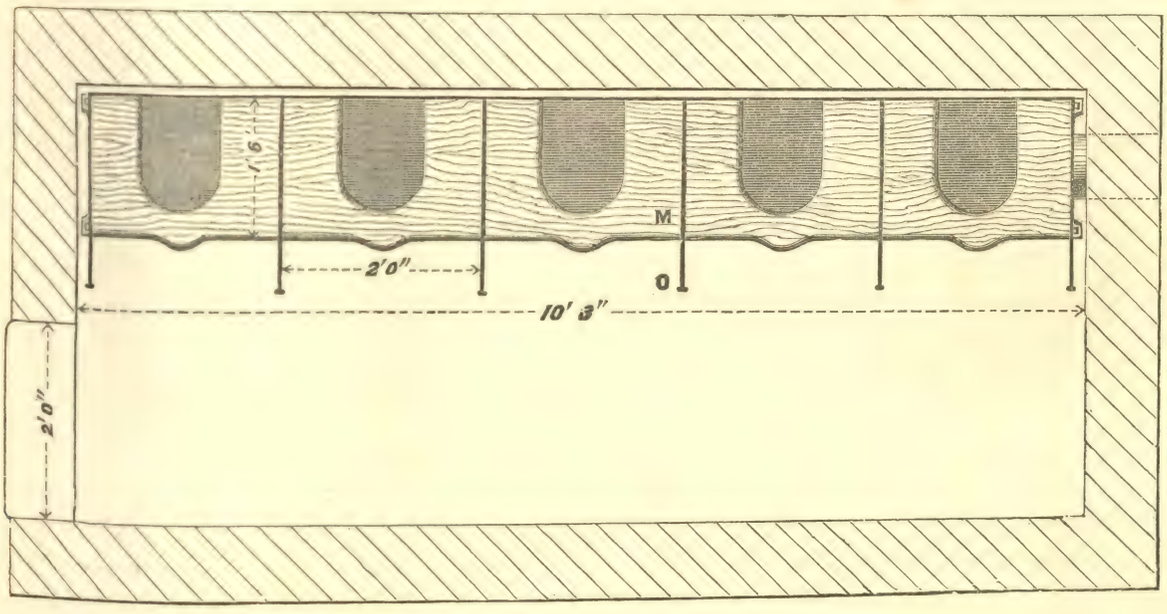
MACFARLANE'S PATENT.

No. 14 ORDURE CLOSET RANGE *for Five Persons.*

Elevation, Fig. 88.



Plan, Fig. 89.



Prices, complete, ready for fitting up, delivered in Glasgow.

For 2 Persons,	£5	10	0	For 6 Persons,	£13	6	6
" 3 "	7	13	0	" 8 "	17	12	6
" 4 "	9	13	0	" 10 "	21	13	0
" 5 "	11	9	0				

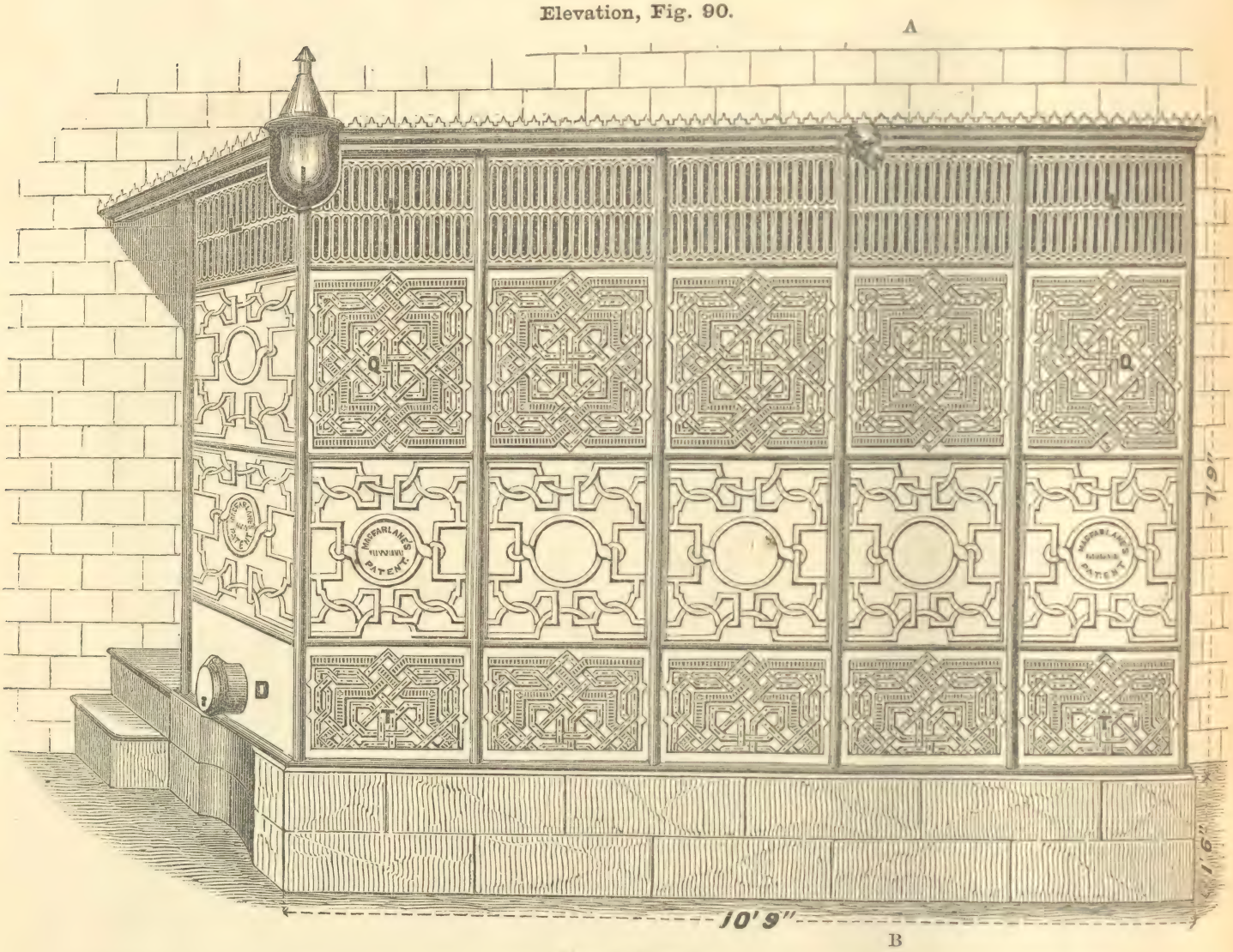
Figs. 88 and 89 represent our No. 14 ORDURE CLOSET RANGE for Five Persons, enclosed in a building. It is in every respect the same as No. 2, Fig. 2, but each seat is separated by an iron partition O, and back guard plate P, under which is an effluvia pipe H, having an opening above each seat, and communicating to the external atmosphere. The advantages of this arrangement are evident: the partition O, gives privacy and comfort, whilst the back guard plate P, prevents any person from standing on the seats, and assists in conveying the effluvia given off from the person at each discharge, along the effluvia pipes to the external atmosphere. The building is here partially illustrated for the purpose of showing the general arrangement.

Scale, ½ inch—1 foot.

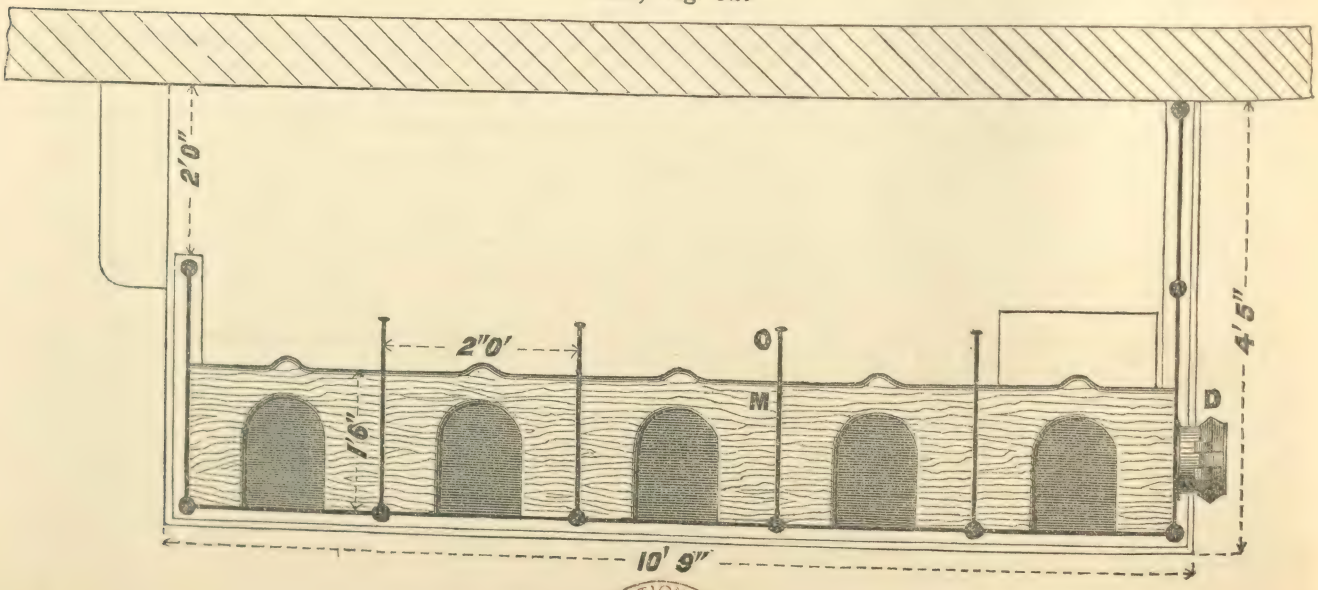
MACFARLANE'S PATENT.

No. 15 ORDURE CLOSET RANGE *for Five Persons.*

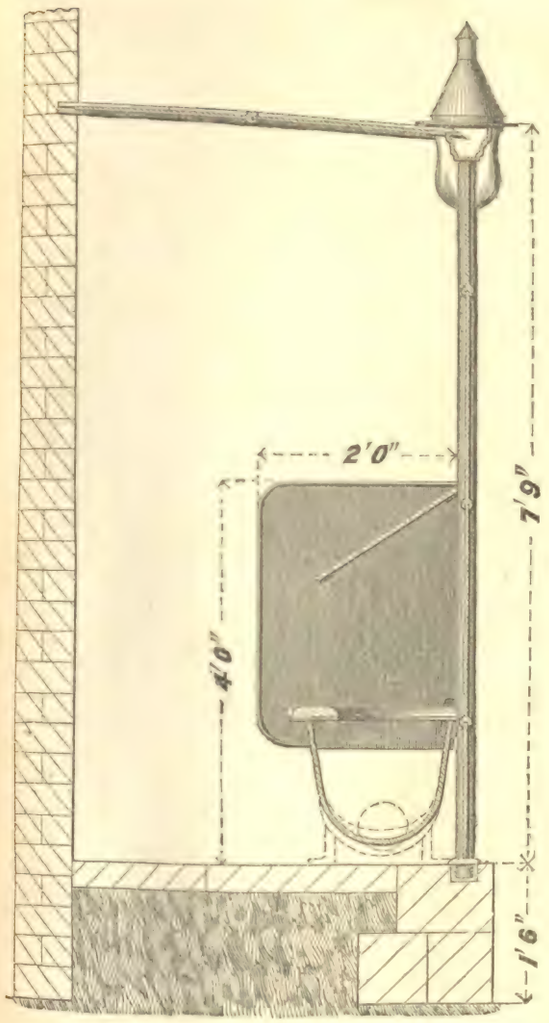
Elevation, Fig. 90.



Plan, Fig. 92.



Section through A B, Fig. 91.



Prices, complete, ready for fitting up, (exclusive of lamp and gas fittings,) delivered in Glasgow:—

For 2 Persons,	£14	0	0
" 3 "	18	4	0
" 4 "	22	5	0
" 5 "	26	2	6
" 6 "	30	4	0
" 8 "	38	9	0
" 10 "	46	10	0

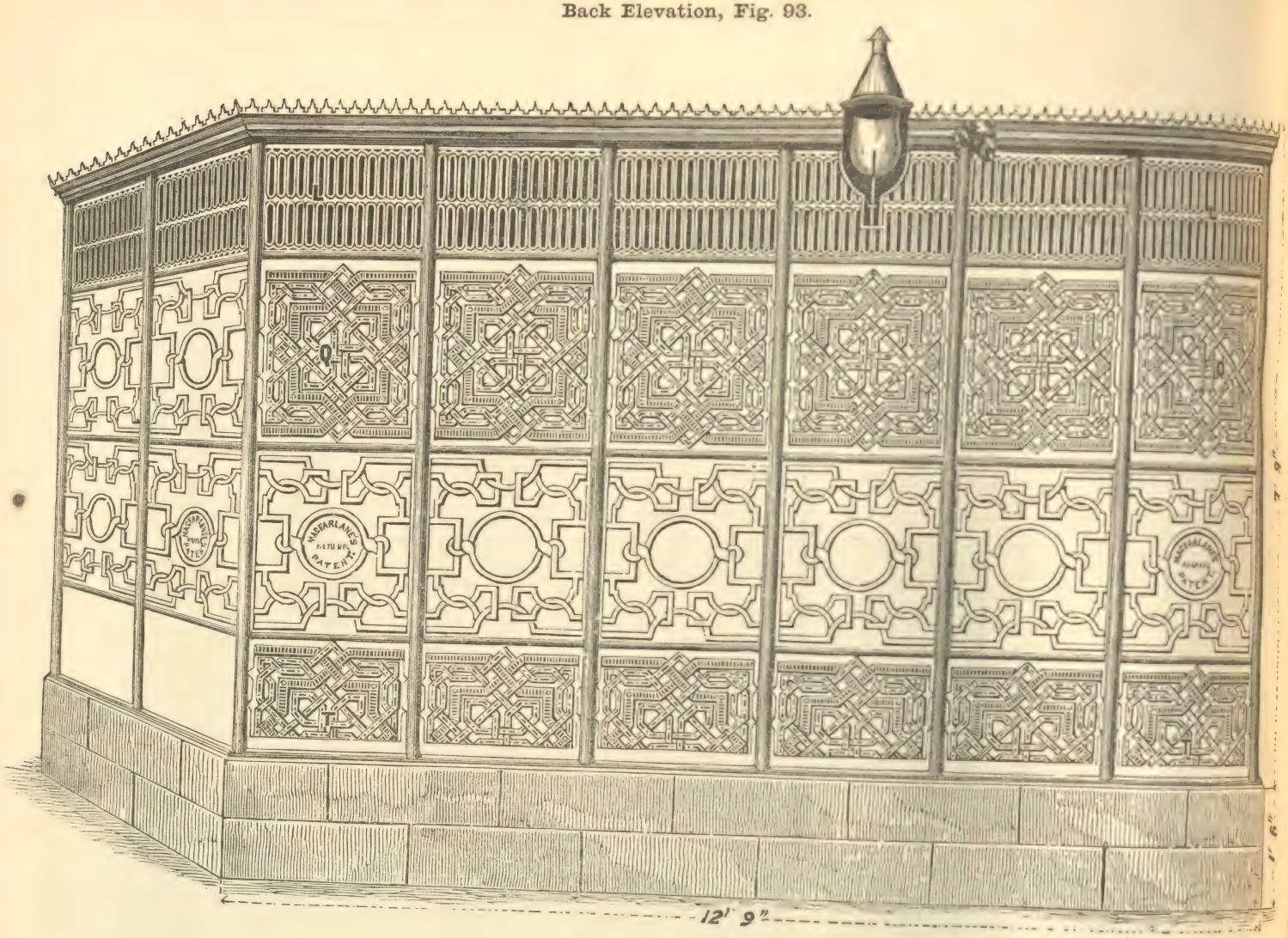
Figs. 90, 91, and 92, represent our No. 15 ORDURE CLOSET RANGE for Five Persons. Its interior arrangements are similar to our No. 14, the front and end walls and roof are wholly composed of ornamental cast iron plates and pillars, all dovetailed together, the whole structure being placed against a wall, and resting on ground base rail. It is lighted and ventilated from the sides, by open fret work L, and perforated plates Q, and at night by gas lamp. No door is recommended to be put on the entrance, as the end wall screens the person inside. In situations, when necessary, a cast iron screen can be placed opposite the entrance.

No. 15 ORDURE CLOSET RANGE has many advantages to recommend its adoption. The materials being Cast Iron are in their nature indestructible, whilst the ventilation, by means of the fret work and perforated plates, produce a marvellous degree of freshness, and entire freedom from smell.

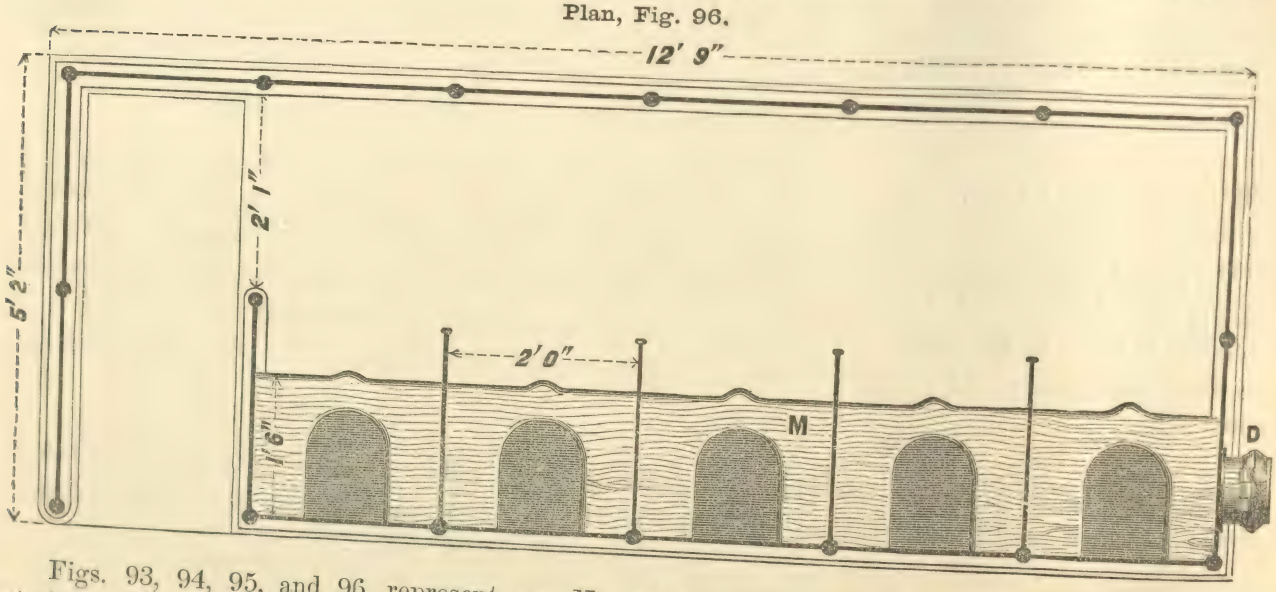
Scale, ½ inch—1 foot.

No. 16 ORDURE CLOSET RANGE *for Five Persons.*

Back Elevation, Fig. 93.



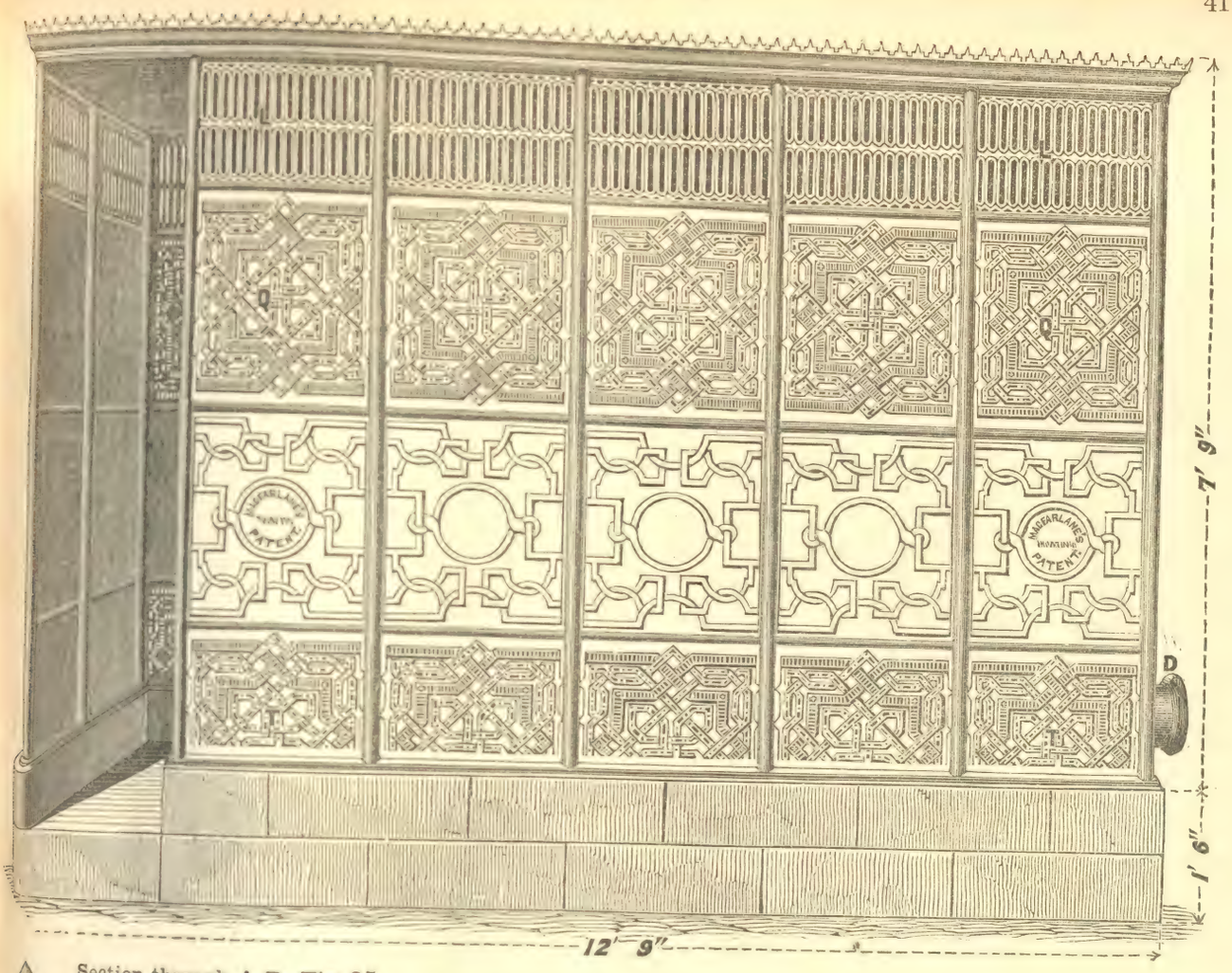
Plan, Fig. 96.



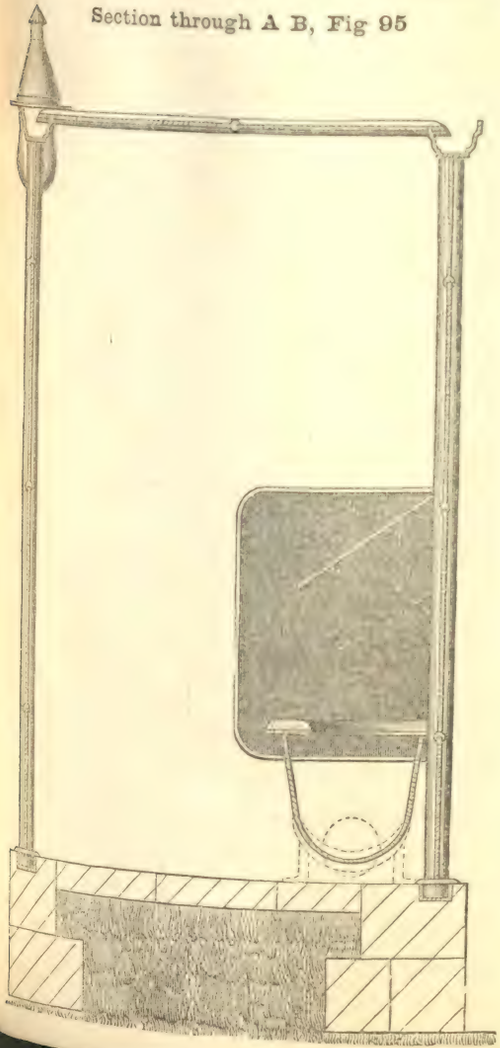
Figs. 93, 94, 95, and 96 represent our No. 16 ORDURE CLOSET RANGE for Five Persons. Its interior arrangements are the same as No. 15. The external walls and roof are wholly of Cast Iron, the open fret work L, and perforated plates Q, give light and ventilation to the interior, whilst the Lamp lights it at night. When more than five persons are to be accommodated, there is an entrance at each end.

No. 16 ORDURE CLOSET RANGE is well adapted for situations where it is desirable to be unconnected with the adjacent buildings; the chaste and unobtrusive character of the structure adapts it for almost any situation, without detracting from the amenity of the surrounding objects.

Front Elevation, Fig. 94.



Section through A B, Fig 95



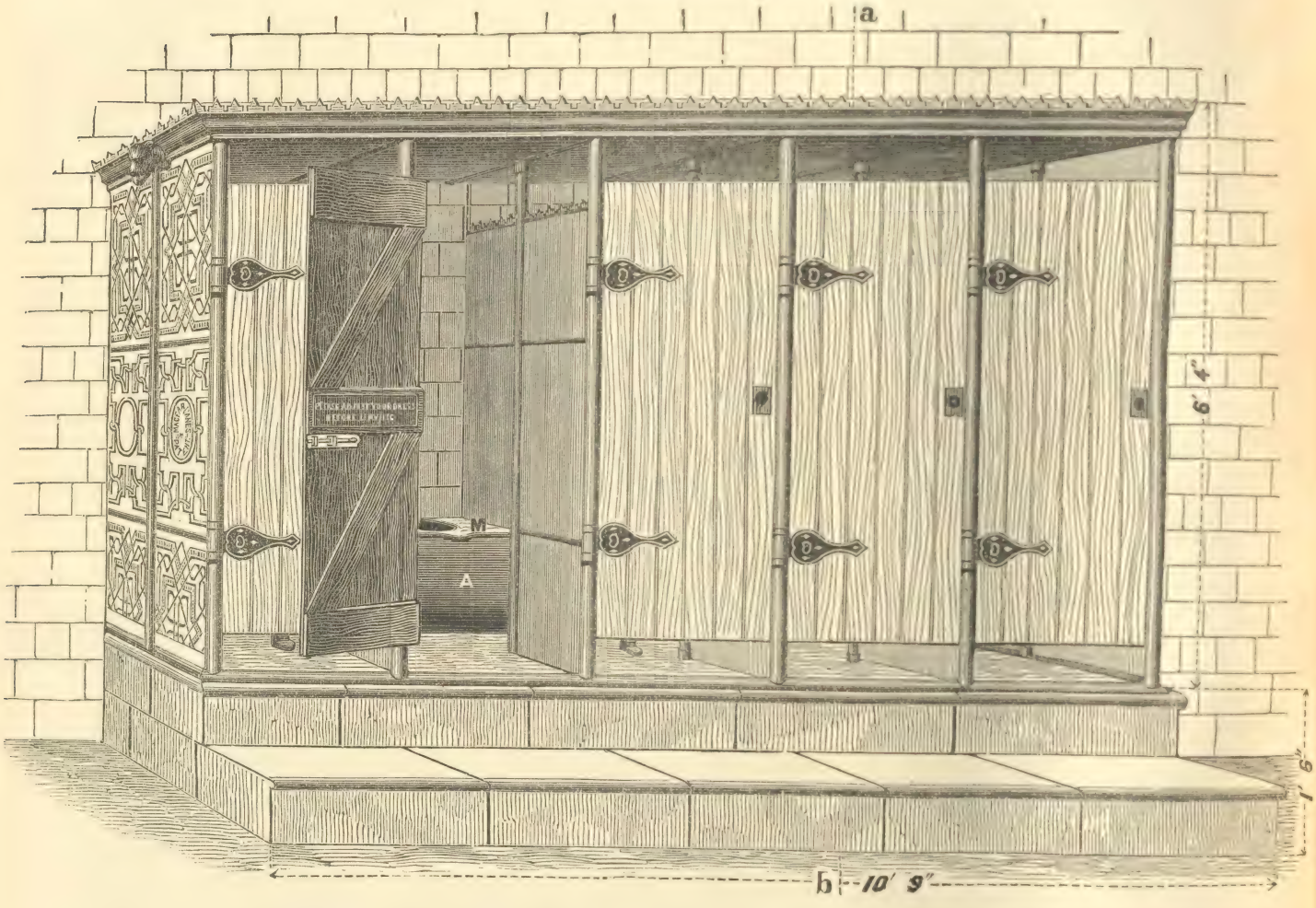
Prices, complete, ready for fitting up, (exclusive of Lamp and Gas Fittings,) delivered in Glasgow:—

For	2	Persons,	£21 15	6
"	3	"	26 19	6
"	4	"	31 18	6
"	5	"	37 9	0
"	6	"	45 19	0
"	8	"	56 19	0
"	10	"	68 4	0

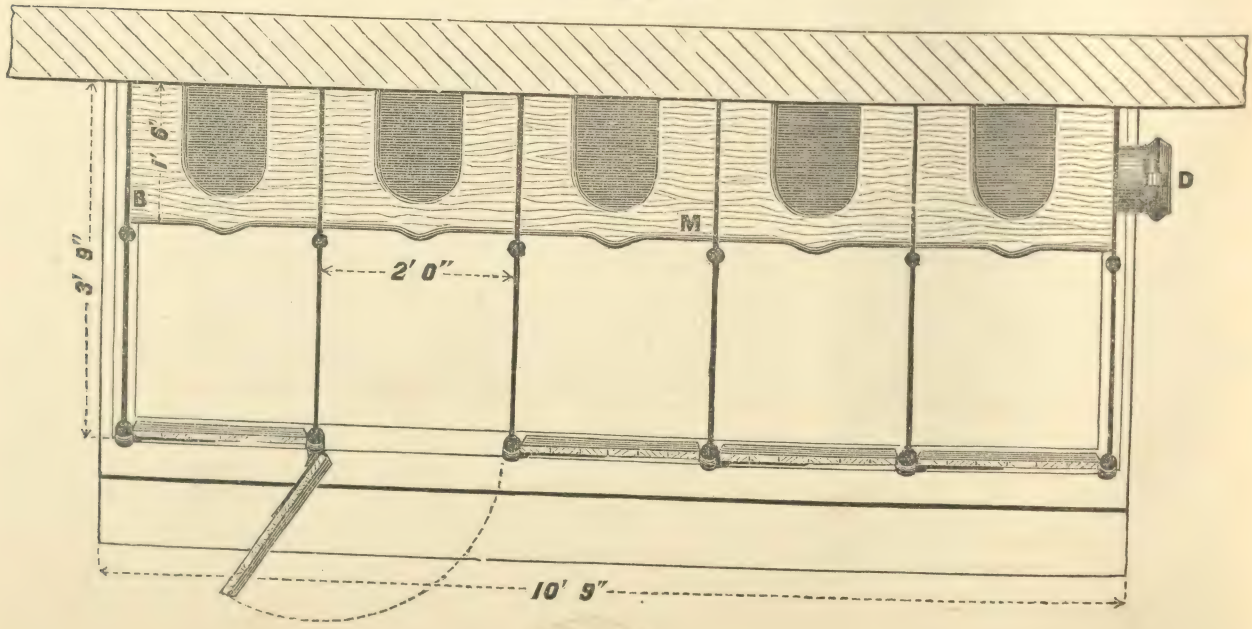
Scale, ½ inch—1 foot.

No. 17 ORDURE CLOSET *for Five Persons.*

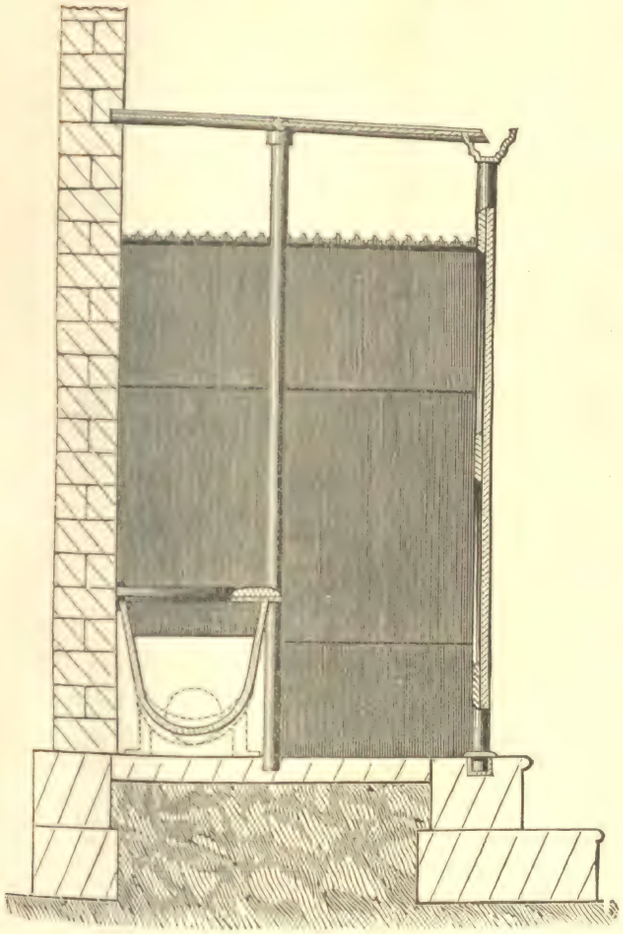
Front Elevation, Fig. 97.



Plan, Fig. 99.



Section through A B, Fig. 98.



Prices, complete, ready for fitting up, delivered in Glasgow.

For 1 Person,	£7	12	6
" 2 "	12	11	0
" 3 "	16	11	0
" 4 "	20	14	0
" 5 "	24	19	0
" 6 "	29	3	6
" 8 "	37	16	6
" 10 "	46	4	0

Figs. 97, 98, and 99 represent our No. 17 ORDURE CLOSET RANGE for Five Persons. It is divided into separate compartments, each having a separate door; the partition, walls, and roof, are wholly composed of Cast Iron plates and pillars, all dovetailed together, the whole structure being placed against a wall, and resting on ground base rail, and each compartment having its own door.

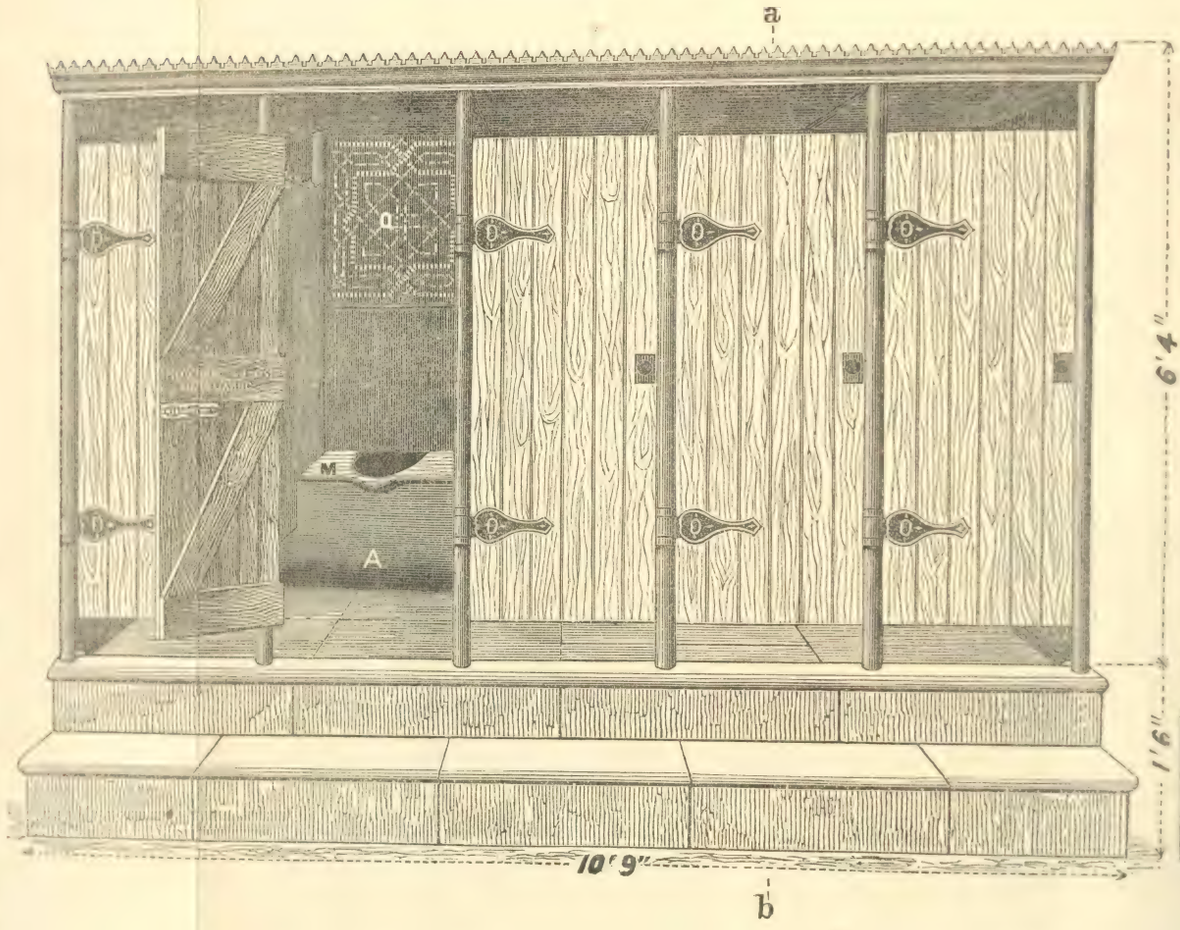
No. 17 ORDURE CLOSET RANGE will be found particularly suitable for Schools, &c., when the adjacent buildings can be taken advantage of for forming the back wall of the Closet.

Scale, ½ inch—1 foot.

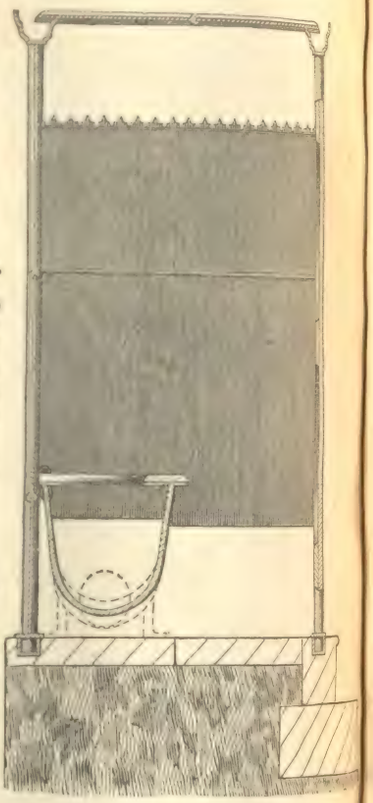
MACFARLANE'S PATENT.

No. 18 ORDURE CLOSET, *for Five Persons.*

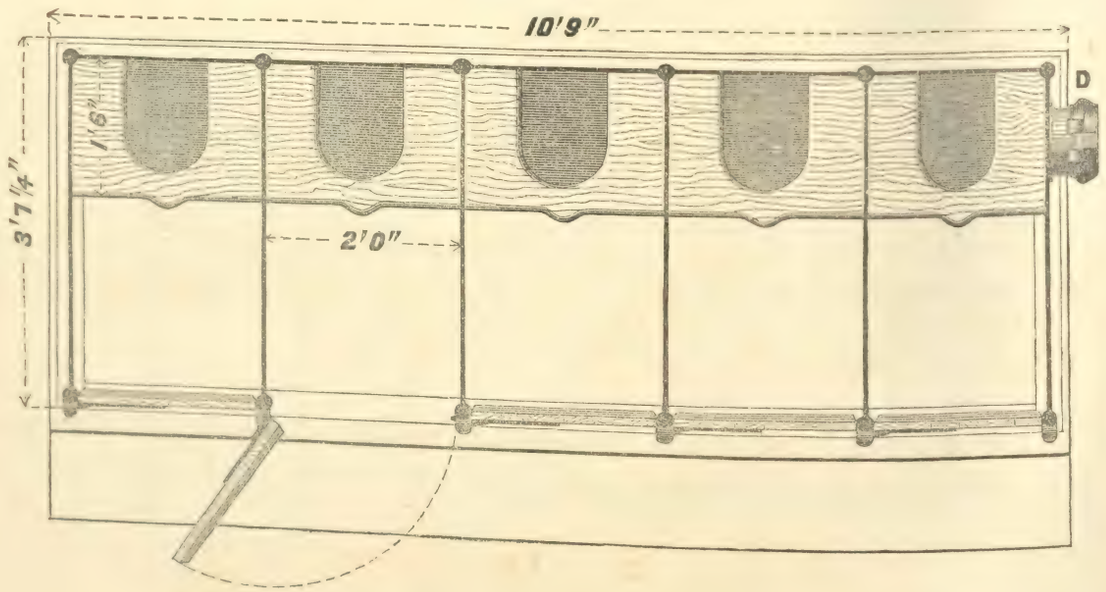
Front Elevation, Fig. 100.



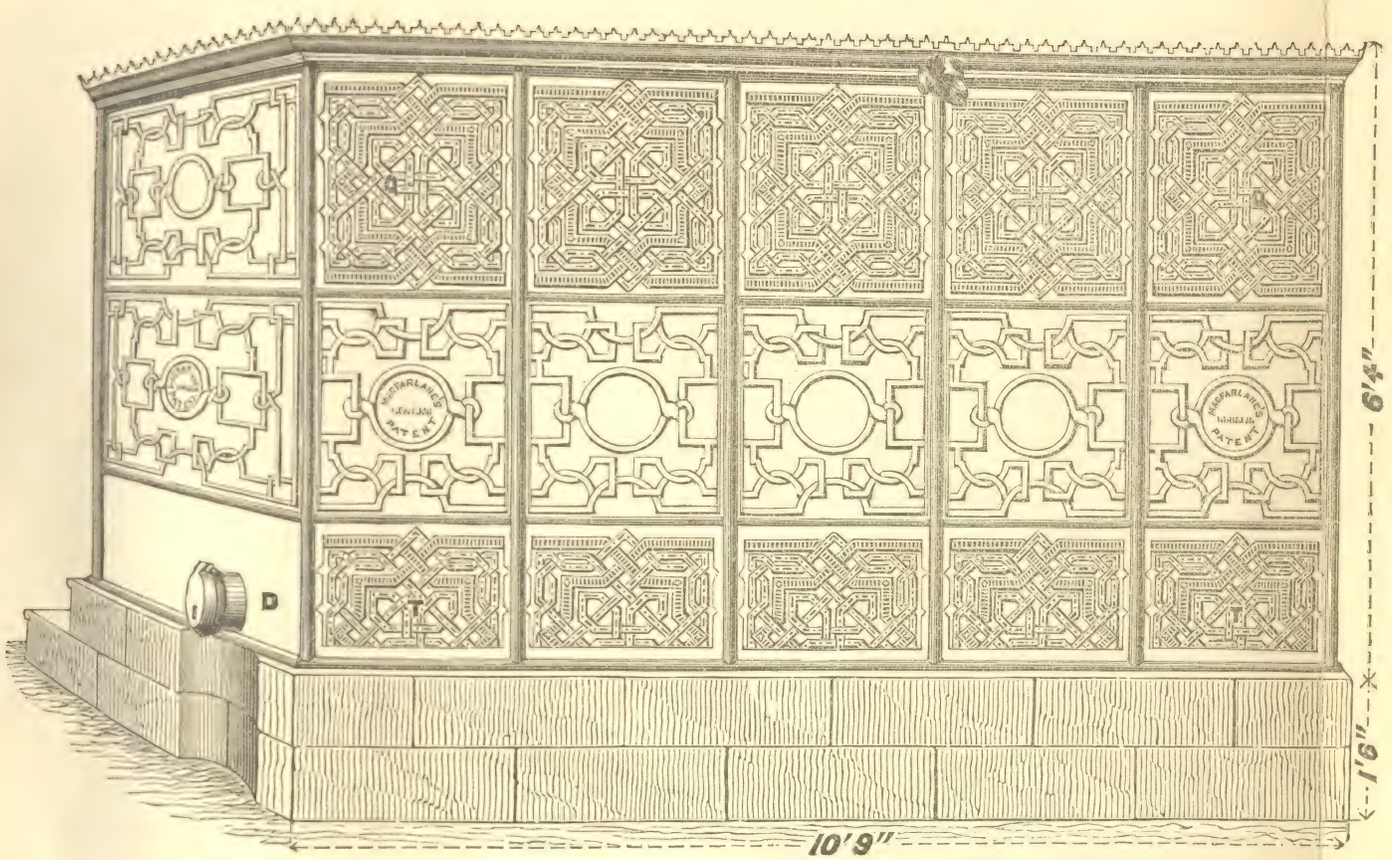
Section through A B, Fig. 101.



Plan, Fig. 103.



Back Elevation, Fig. 102.



Prices, complete, ready for fitting up, delivered in Glasgow.

For 1 Person,	£8	16	6	For 5 Persons,	£29	3	0
" 2 "	14	8	0	" 6 "	34	0	0
" 3 "	19	6	0	" 8 "	45	2	6
" 4 "	24	3	0	" 10 "	54	0	0

Figs. 100, 101, 102, and 103 represent our No. 18 Ordure Closet Range for Five Persons. Its interior arrangements are the same as No. 17, but instead of being fitted up against the wall of a building, the whole structure is complete in itself, and wholly composed of Cast Iron.

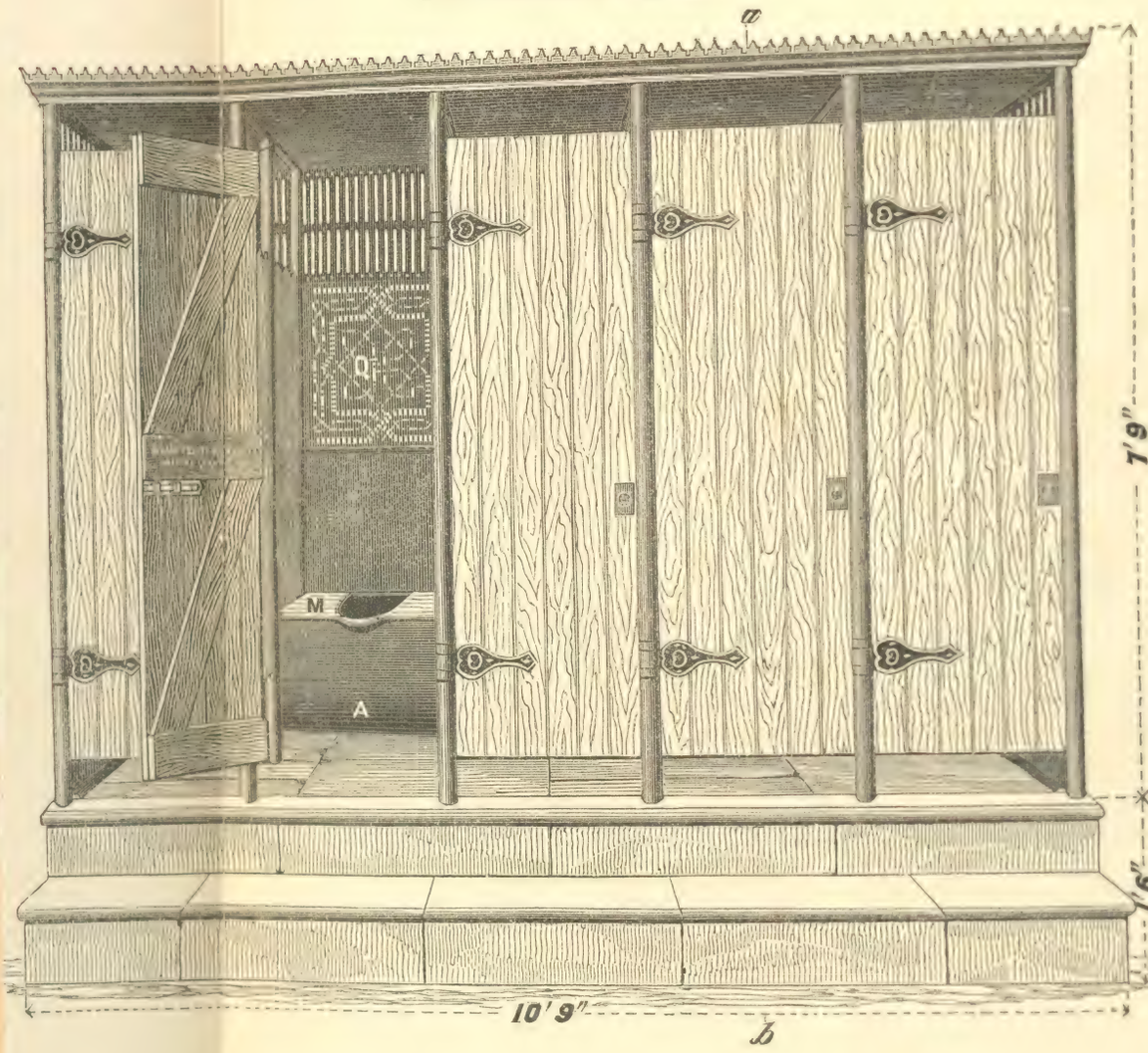
No. 18 Ordure Closet Range is also well suited for Schools, &c., and for situations when it is desirable to be unconnected with the adjacent buildings.

Scale, ½ inch—1 foot.

MACFARLANE'S PATENT.

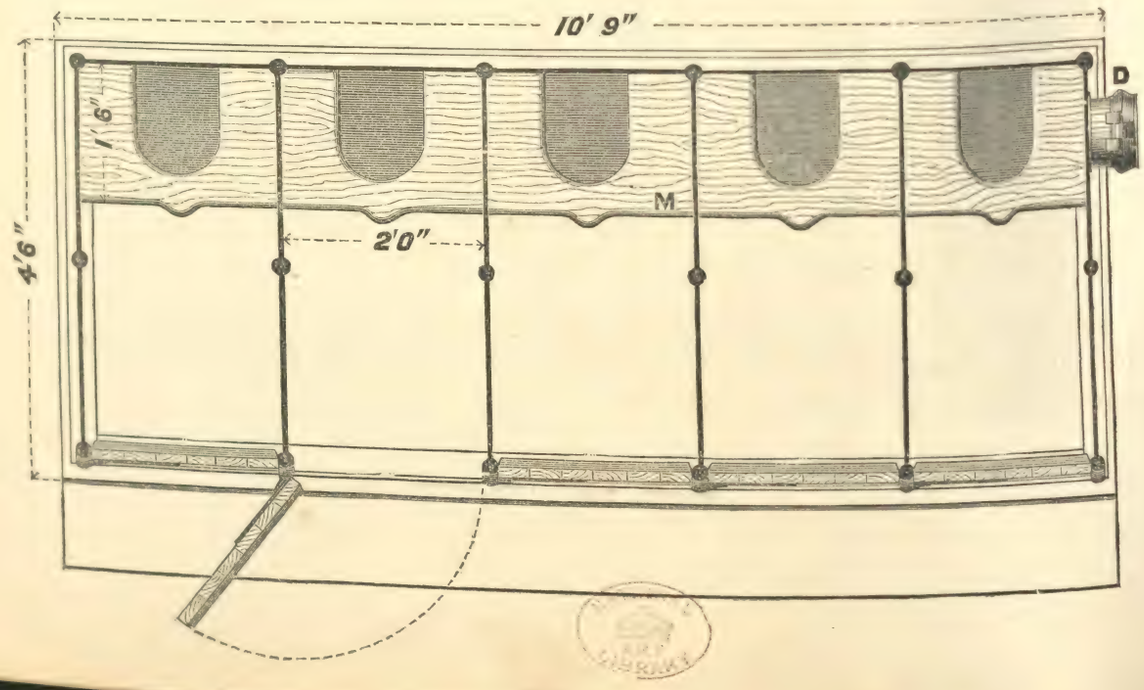
No. 19 ORDURE CLOSET RANGE *for Five Persons.*

Front Elevation, Fig. 104.

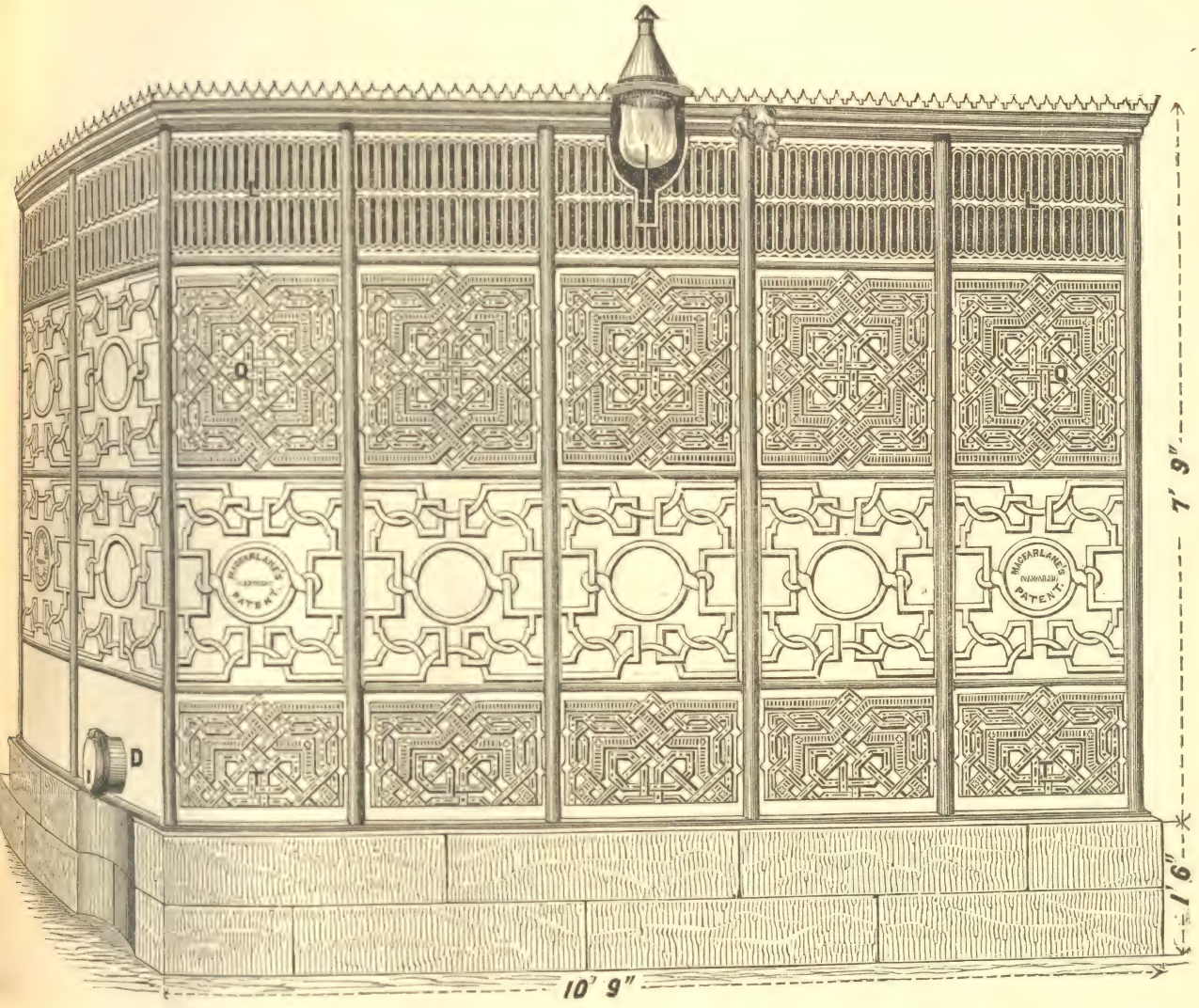


Section through Fig. A B 105.

Plan, Fig. 107.



Back Elevation, Fig 106.



Prices, complete, ready for fitting up, (exclusive of lamp and gas Fittings) delivered in Glasgow.

For 1 Person,	£10	12	6	For 5 Persons	£36	9	6
" 2 "	18	9	6	" 6 "	42	19	0
" 3 "	23	19	0	" 7 "	55	14	0
" 4 "	30	2	6	" 8 "	68	9	6

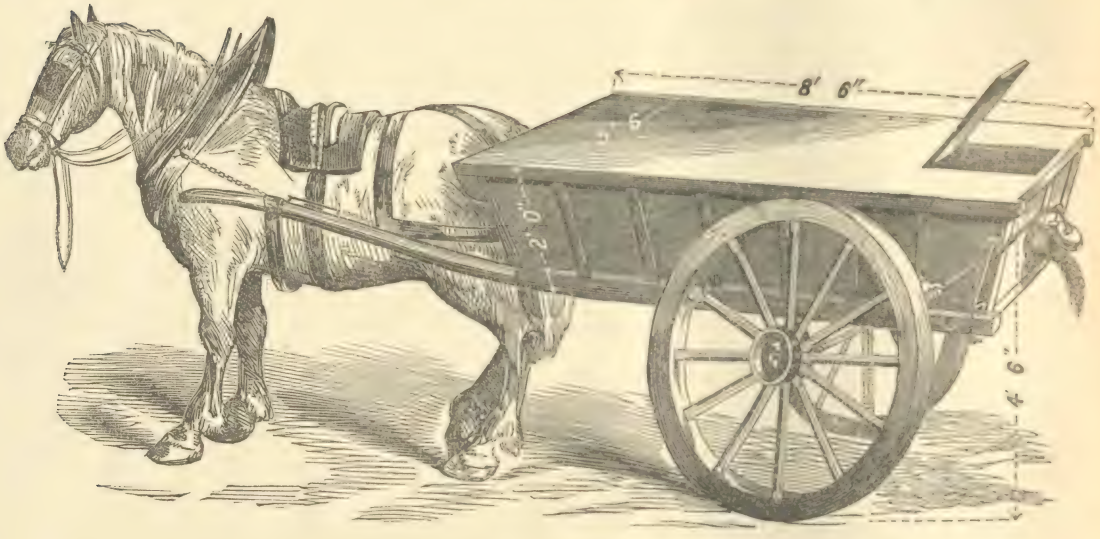
Figs. 104, 105, 106, and 107, represent our No. 19 ORDURE CLOSET RANGE for Five Persons. Its arrangements are the same as No. 18, but more room is allowed in each compartment, and the height is also 18 inches higher.

No. 19 ORDURE CLOSET RANGE will be found to be well adapted for situations when it is desirable to be unconnected with the adjacent buildings. The chaste and unobtrusive character of the structure adapts it for almost any situation, without detracting from the amenity of the surrounding objects.

Scale, ½ inch—1 foot.

ORDURE CLOSET TOOLS.

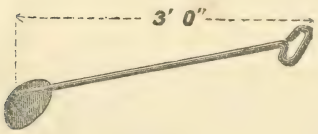
Ordure Cart, Fig. 12.



Price, complete, delivered in Glasgow, £28.

Fig. 12 represents our ORDURE CART. The apparatus consists of a close bodied water-tight cart. An opening is in the top for receiving the soil, and the discharge valve at the end is similar in its action to the valve of our Ordure Closet. The cut represents the hand of the attendant in the act of opening the valve, and discharging the contents of Cart at the manure depot.

Ordure Scraper, Fig. 108.



Price 2s. each.

Bucket, Fig. 109.

Price 12s. 6d. each.

Fig. 108 represents ORDURE SCRAPER—used for facilitating the discharge of our Ordure Closets.

Fig. 109 represents ORDURE BUCKET—used for emptying our Ordure Closets, and discharging the contents into Ordure Cart.

Scale, ½ inch—1 foot.

PART VII.

URINALS.

In directing attention to this important class of goods, we cannot but recall the time when, to speak of erecting a convenience of this kind on the street, would have brought down upon us the execrations of almost the whole community. Now, however, a sounder view is taken of the matter, and our authorities in almost every town in the kingdom acknowledge the obligations that rest upon them to provide accommodation of this kind, in order that a proper sense of decency may be observed in complying with one of the commonest wants of our nature. It is, however, to be regretted that the female portion of the community have not as yet received a corresponding measure of attention.

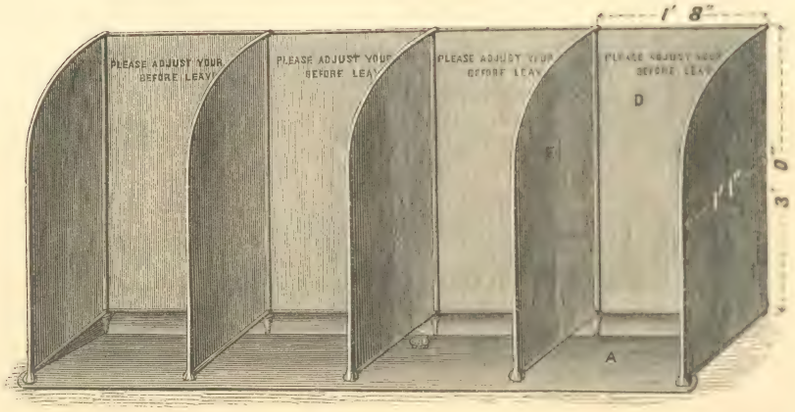
The long-continued exertions we have made to introduce a class of appliances really suited to meet this want, and the large measure of success we have met with, enable us now to submit such a variety of patterns as will be likely to meet every public requirement. As an evidence of the high favour in which our Urinals are held, they are now prominent features in the streets and parks of almost every town in the kingdom, as well as on the Continent and in America.

Amongst the many vital improvements we have lately introduced in their construction, we may more particularly allude to the ornamental perforated openings in the walls, by means of which direct currents of fresh air are admitted from all quarters into the Urinal, thereby keeping them fresh and free of odour. The various kinds shown in our Catalogue can be modified in many ways to suit particular positions, and in many cases it will be found convenient to combine them with the closets, and with the view of more clearly illustrating this, we refer to page 32 for examples.

Urinals ought to be well lighted, and thoroughly scrubbed and washed out daily by means of elastic hose and brush, see page 58, when hose is not available, a bucket will answer the purpose.

No. 7 URINAL RANGE *for Five Persons.*

Fig. 111.



Prices, complete, ready for fitting up, delivered in Glasgow:—

For 1 Person,	£1	5 6
" 2 "	2	5 9
" 3 "	3	4 0
" 4 "	4	3 6
" 5 "	5	2 6
" 6 "	6	2 0
" 8 "	8	4 6
" 10 "	10	6 0

Fig. 111 represents a No. 1 URINAL RANGE for Four Persons, each compartment being 1 foot 8 inches wide. The apparatus consists of an upright back, with projecting divisions resting upon a sole-plate, attached to which is a syphon trap connecting with the sewers.

No. 2 URINAL, *for Corner.*

Fig. 16.

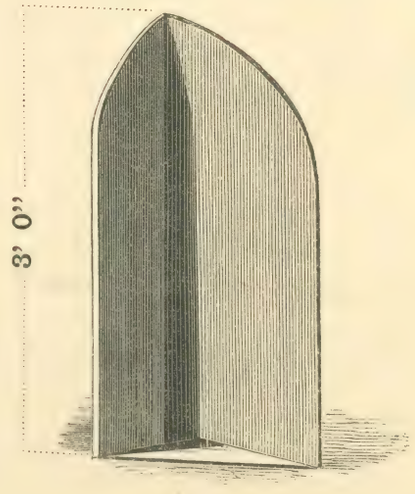


Fig. 16 represents a No. 2 URINAL, suitable for corners of Buildings, &c. It is 3 feet high, and the sides are 1 foot broad.

Price, complete, ready for fitting up, delivered in Glasgow, £0 16 0

Scale, ½ inch,—1 foot.

No. 1 **URINAL** *for One Person.*

No. 1 URINAL RANGE *for Four Persons.*

Fig. 112.

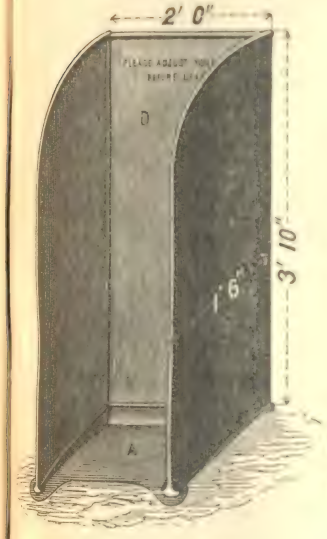
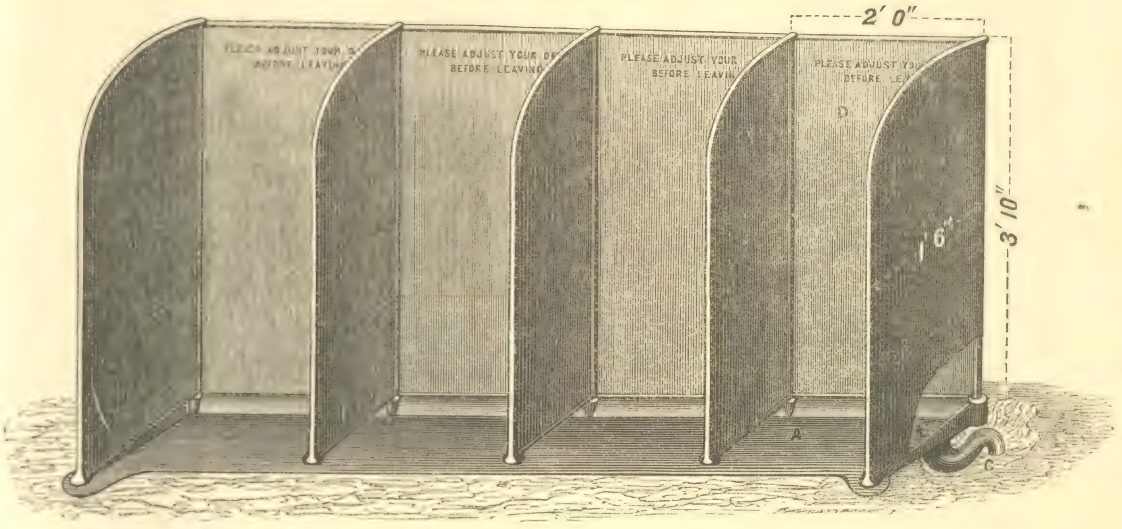


Fig. 113.



Prices, complete, ready for fitting up, delivered in Glasgow:—

For 1 Person,	£1	18	0	For 5 Persons,	£7	5	0
" 2 "	3	8	0	" 6 "	8	12	0
" 3 "	4	11	6	" 8 "	11	8	0
" 4 "	5	19	0	" 10 "	14	14	6

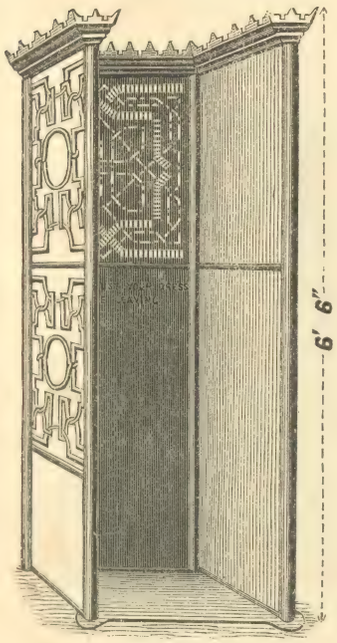
Figs. 112 and 113 represent a No. 1 URINAL RANGE for Four Persons, each compartment 2 feet wide. The apparatus otherwise is of the same construction as Fig. 111.

Nos. 1, 2, and 7 represent the simplest style of our URINALS, and, being wholly composed of cast iron, they are strong and imperishable in their nature.

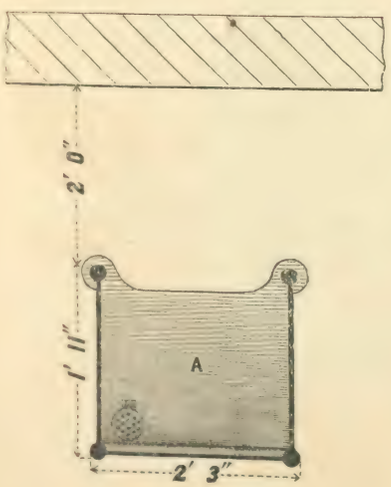
Scale, ½ inch—1 foot.

No. 5 URINAL *for One Person.*

Interior Elevation, Fig. 114.

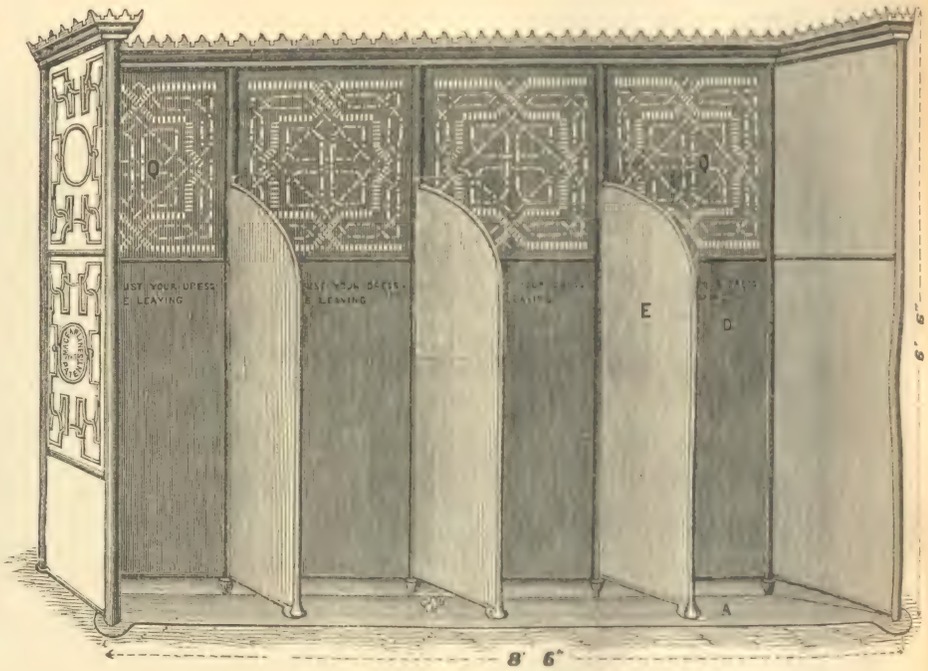


Plan, Fig. 115.

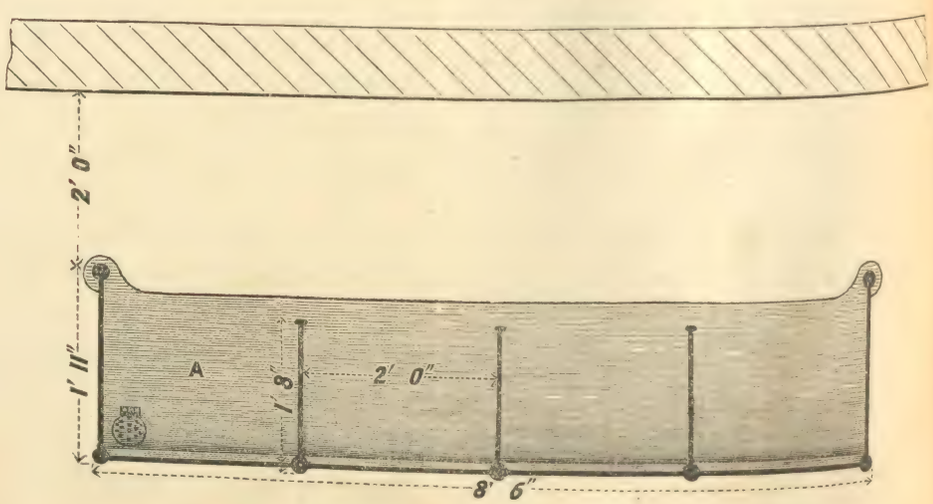


No. 5 URINAL RANGE *for Four Persons.*

Interior Elevation, Fig. 117.

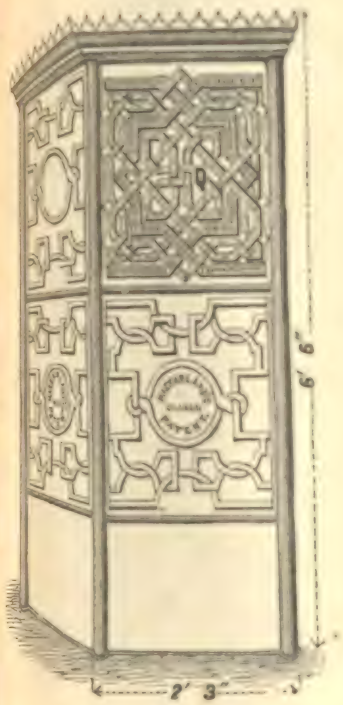


Plan, Fig. 118.

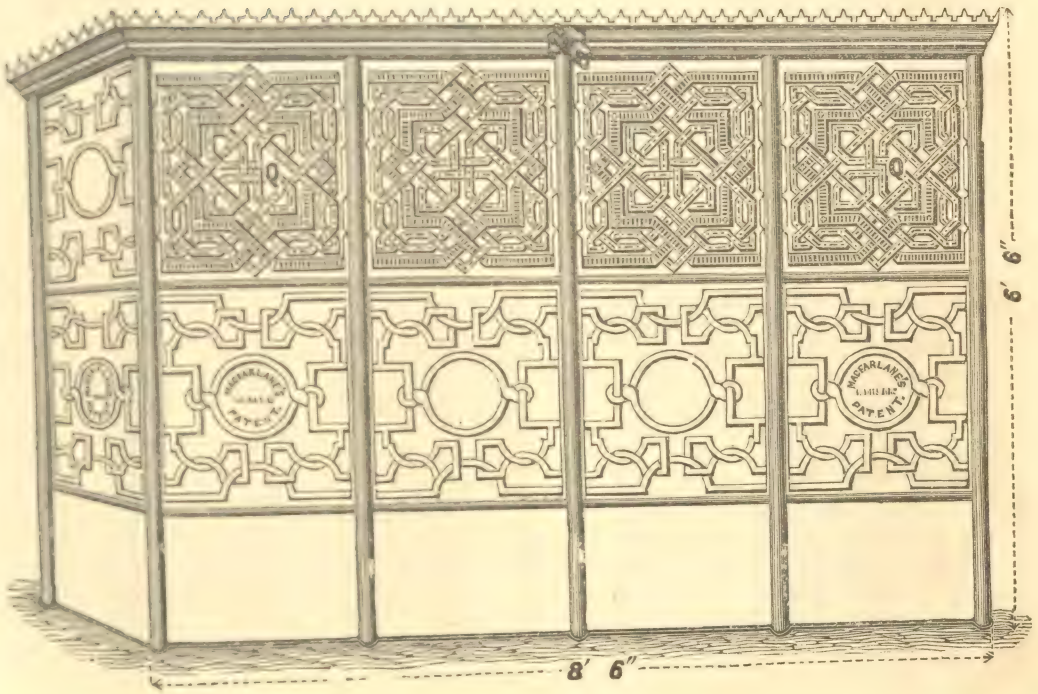


No. 5 URINALS.

Back Elevation, for One Person, Fig. 116.



Back Elevation, for Four Persons, Fig. 119.



Prices, complete, ready for fitting up, delivered in Glasgow:—

For 1 Person,	£4	1	0	For 5 Persons,	£13	9	0
" 2 "	6	6	6	" 6 "	15	15	0
" 3 "	8	19	6	" 8 "	21	1	0
" 4 "	11	6	0	" 10 "	26	6	0

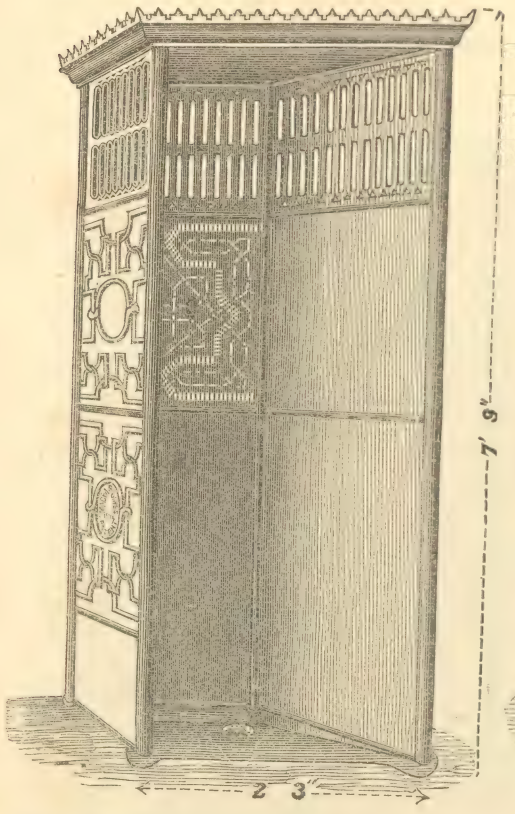
Figs. 114, 115, and 116 represent a No. 5 URINAL for One Person; and Figs. 117, 118, and 119 represent a No. 5 URINAL RANGE for Four Persons. The apparatus consists of an ornamental wall, the upper portion of which has perforated ventilating plates, the whole resting upon a sole plate, attached to which is a syphon trap in connection with the sewers.

No. 5 URINAL has no roof, and is generally fitted up standing out about 2 feet from the wall, as shown by plan Figs. 115 and 118. This arrangement may be modified to suit circumstances.

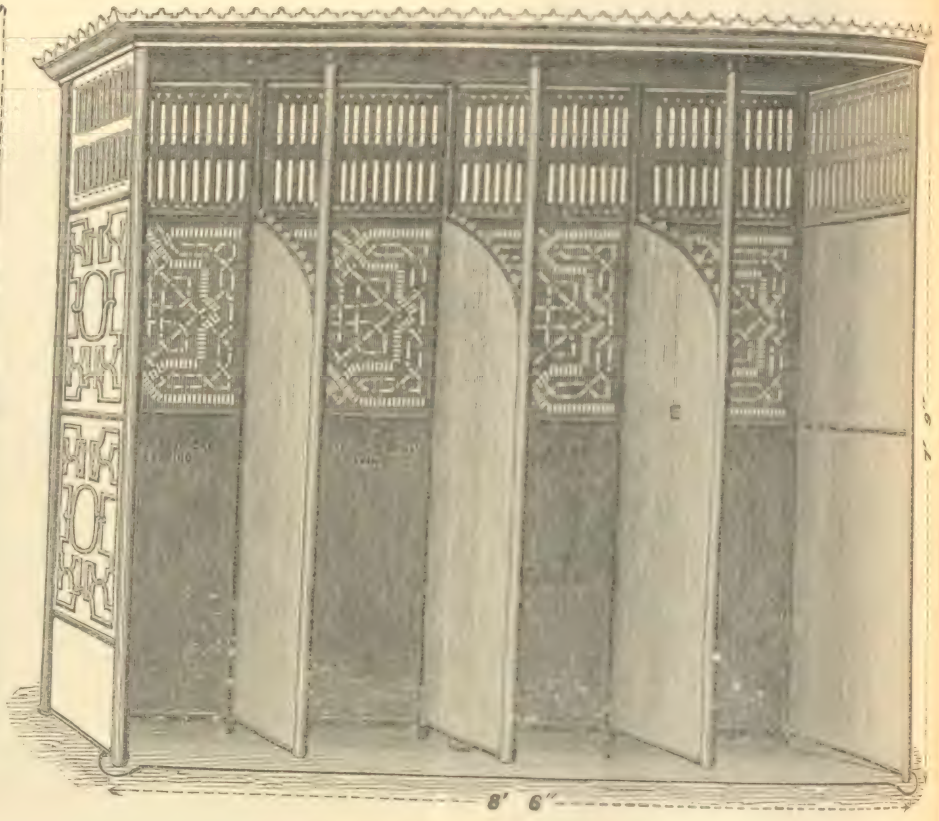
Scale, ½ inch—1 foot.

No. 4 URINALS.

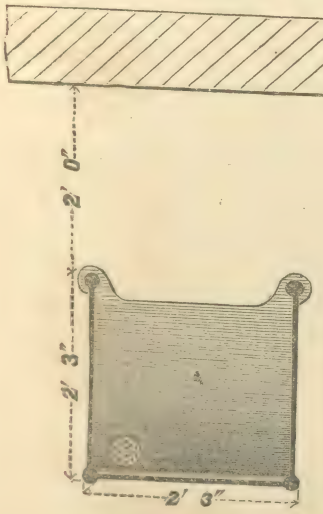
Front Elevation, for One Person, Fig. 120.



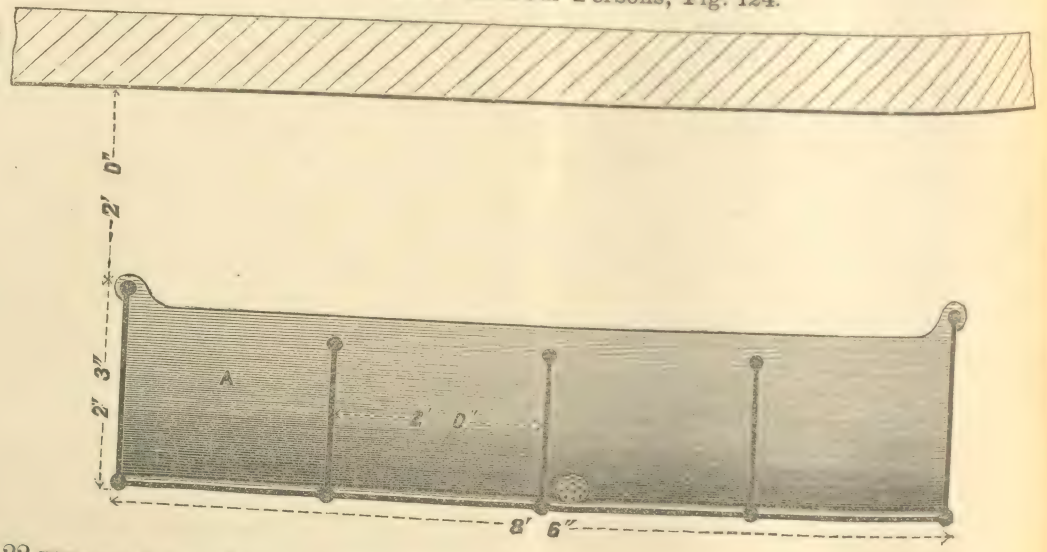
Front Elevation, for Four Persons, Fig. 123.



Plan for One Person, Fig 121



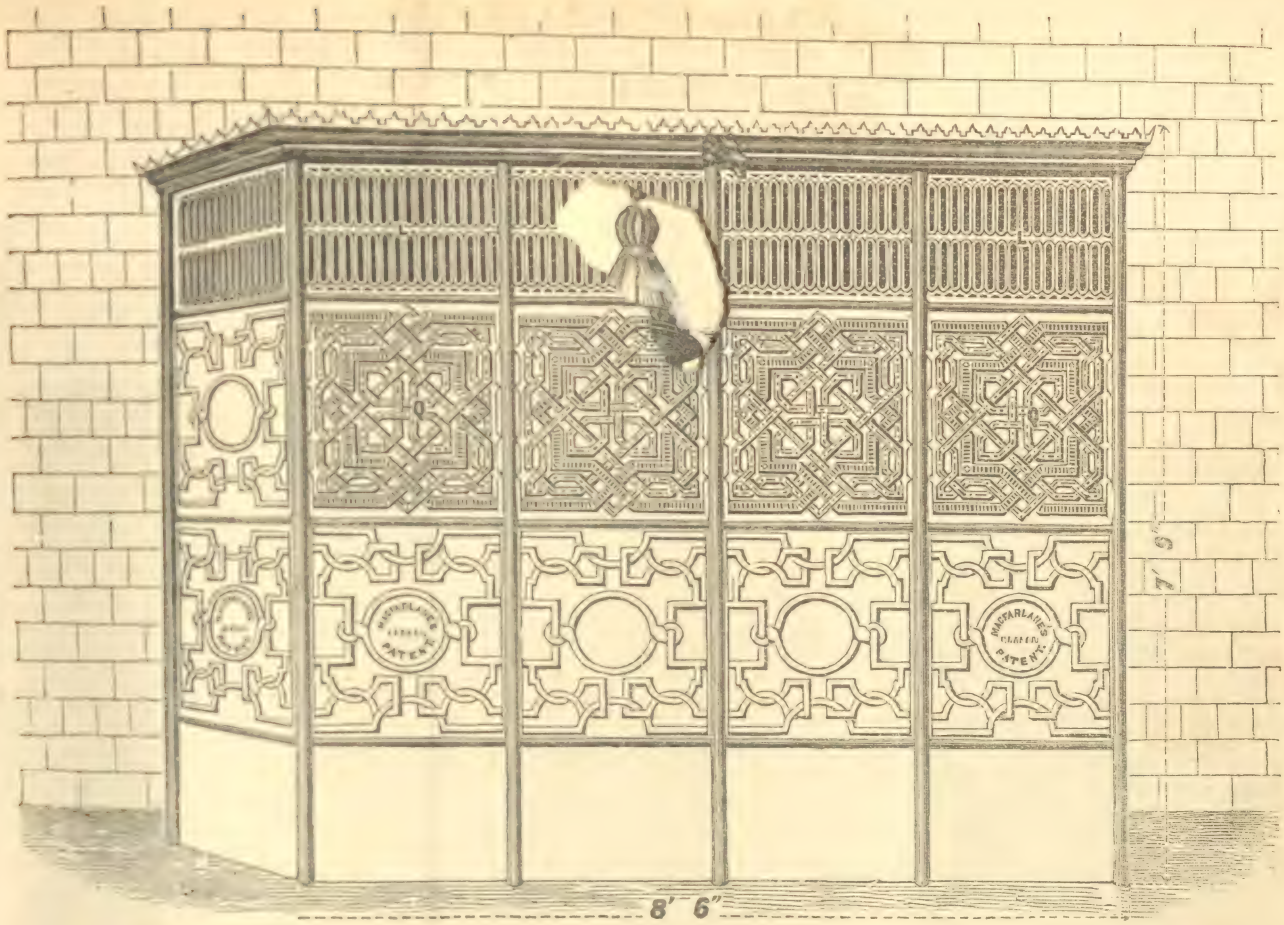
Plan for Four Persons, Fig. 124.



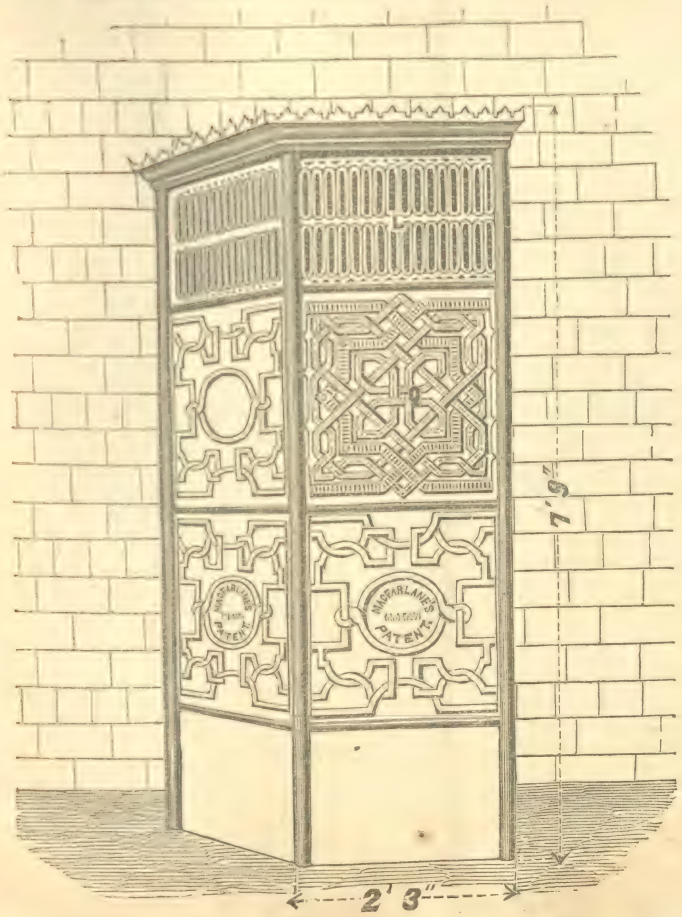
Figs. 120, 121, and 122 represent our No. 4 URINAL for One Person; and Figs. 123, 124, and 125 represent our No. 4 URINAL RANGE for Four Persons. The apparatus is of the same construction as No. 5, but the walls are higher, and the divisions are deeper, and it has a roof to protect the person from the weather.

No. 4 URINAL, like the No. 5, is intended to be fitted up standing out about two feet from a wall, as shown by plans Figs. 121 and 124, and by Elevations Figs. 122 and 125.

Back Elevation, for Four Persons, Fig. 125.



Back Elevation, for One Person, Fig. 122.



Prices, complete, ready for fitting up, delivered in Glasgow:—

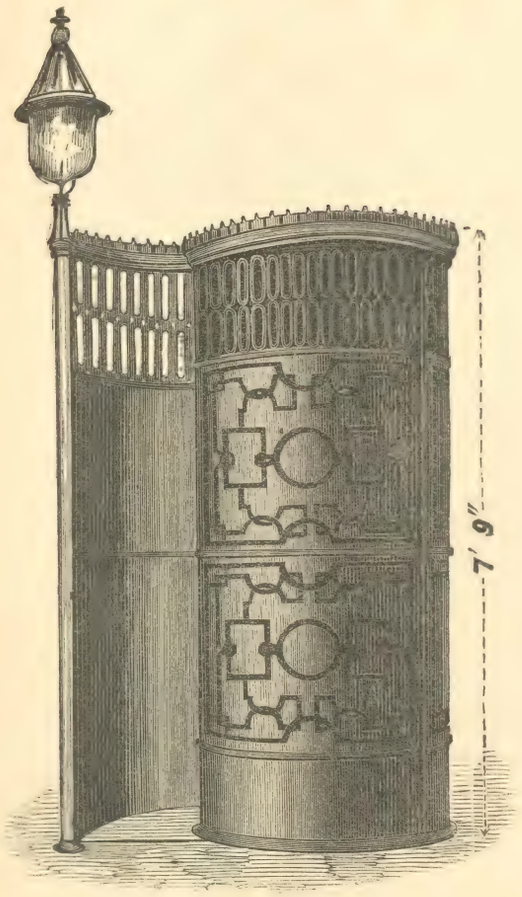
For 1 Person,	£5	3	0
„ 2 „	8	18	6
„ 3 „	12	12	0
„ 4 „	15	13	0
„ 5 „	18	17	6
„ 6 „	22	2	6
„ 8 „	29	12	0
„ 10 „	37	2	0

Scale, ½ inch—1 foot.

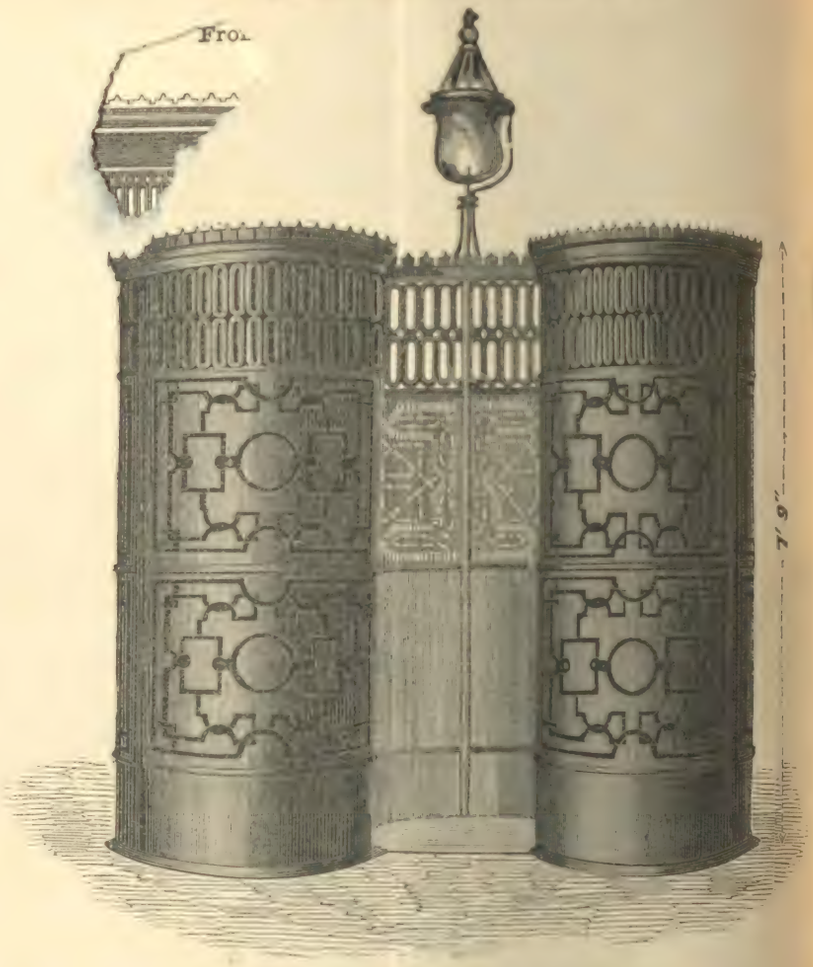
MACFARLANE'S PATENT.

No. 3 URINALS.

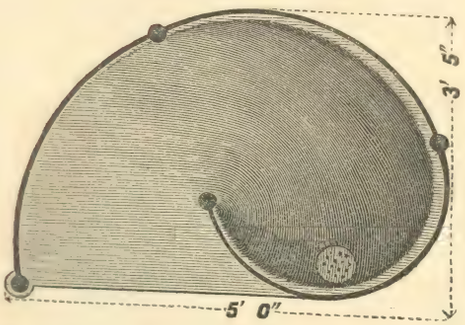
Elevation, for One Person, Fig. 17.



Elevation, for Two Persons, Fig. 18.



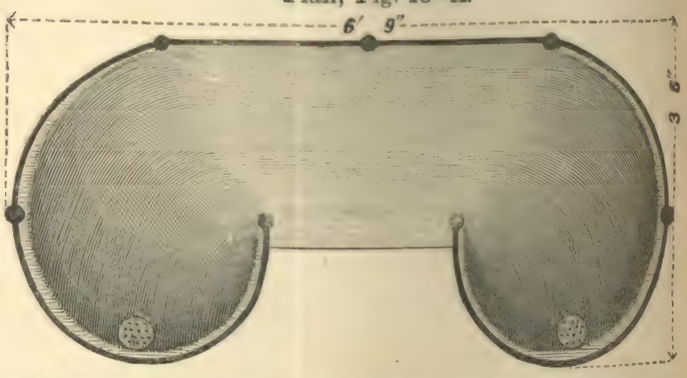
Plan, Fig. 17—A.



Prices, complete, ready for fitting up (exclusive of Lamp and Gas Fittings), delivered in Glasgow:—

£9 15 0 each.

Plan, Fig. 18—A.



Prices, complete, ready for fitting up (exclusive of Lamp and Gas Fittings), delivered in Glasgow:—

£16 5 0 each.

Figs. 17 and 17A represent our No. 3 URINAL for One Person. The apparatus consists of ornamental cast iron walls, wholly surrounding the person inside.

Figs. 18 and 18A represent our No. 3 URINAL for Two Persons, and is otherwise the same as Figs. 17 and 17A.

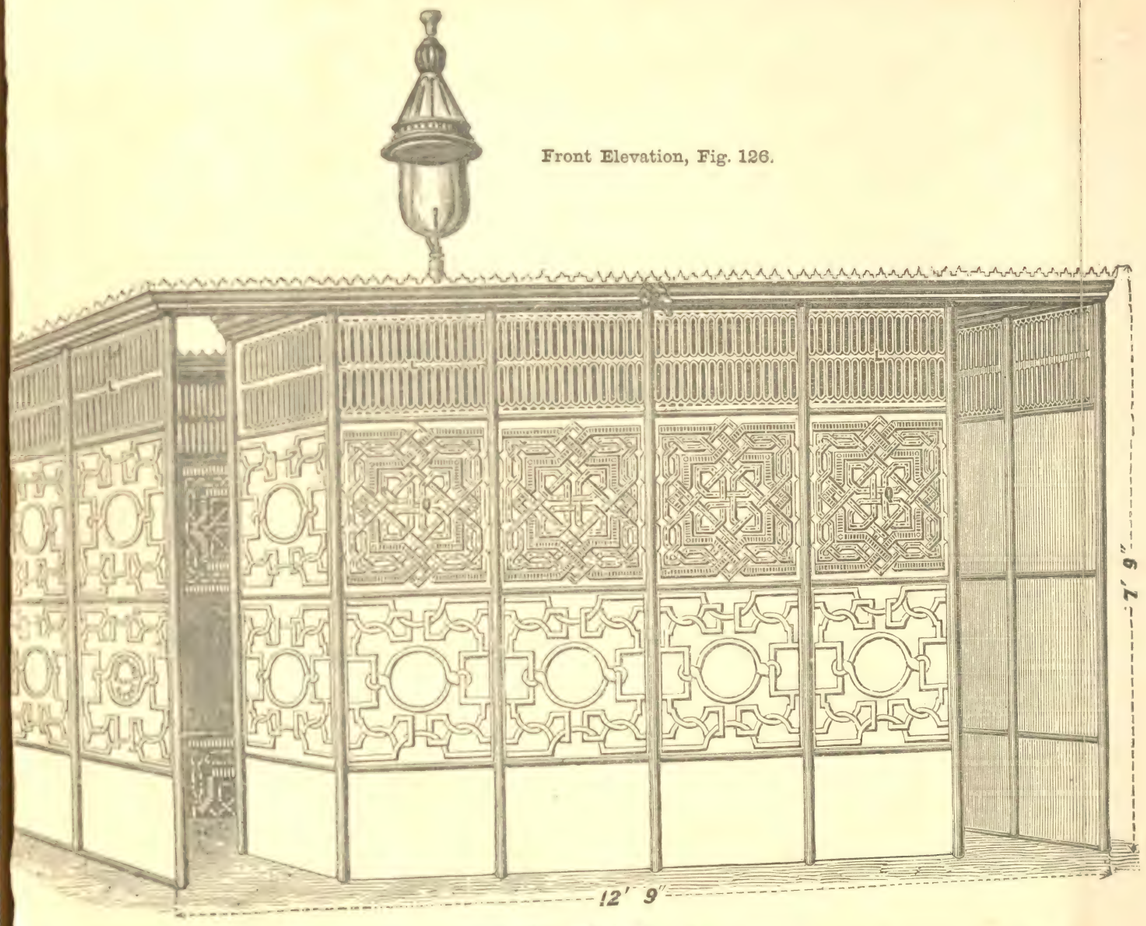
No. 3 URINALS are intended to be fitted up in open situations unconnected with the surrounding buildings.

Scale, ½ inch—1 foot.

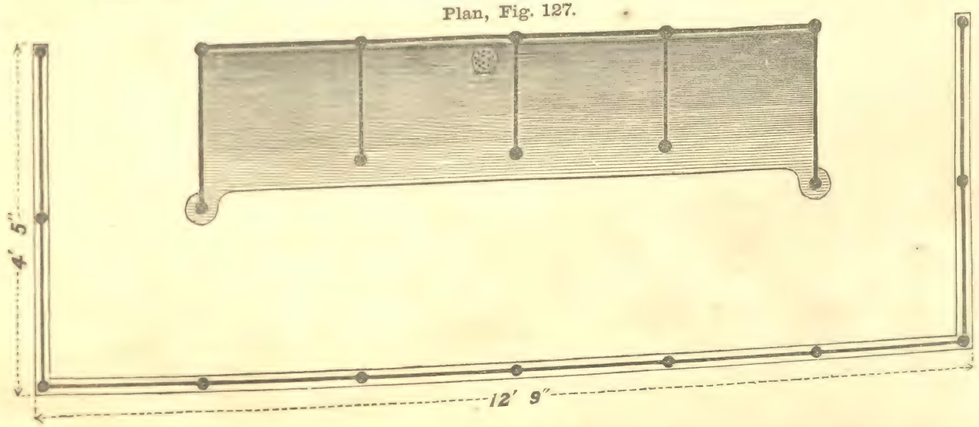
MACFARLANE'S PATENT.

No. 6 URINAL RANGE *for Four Persons.*

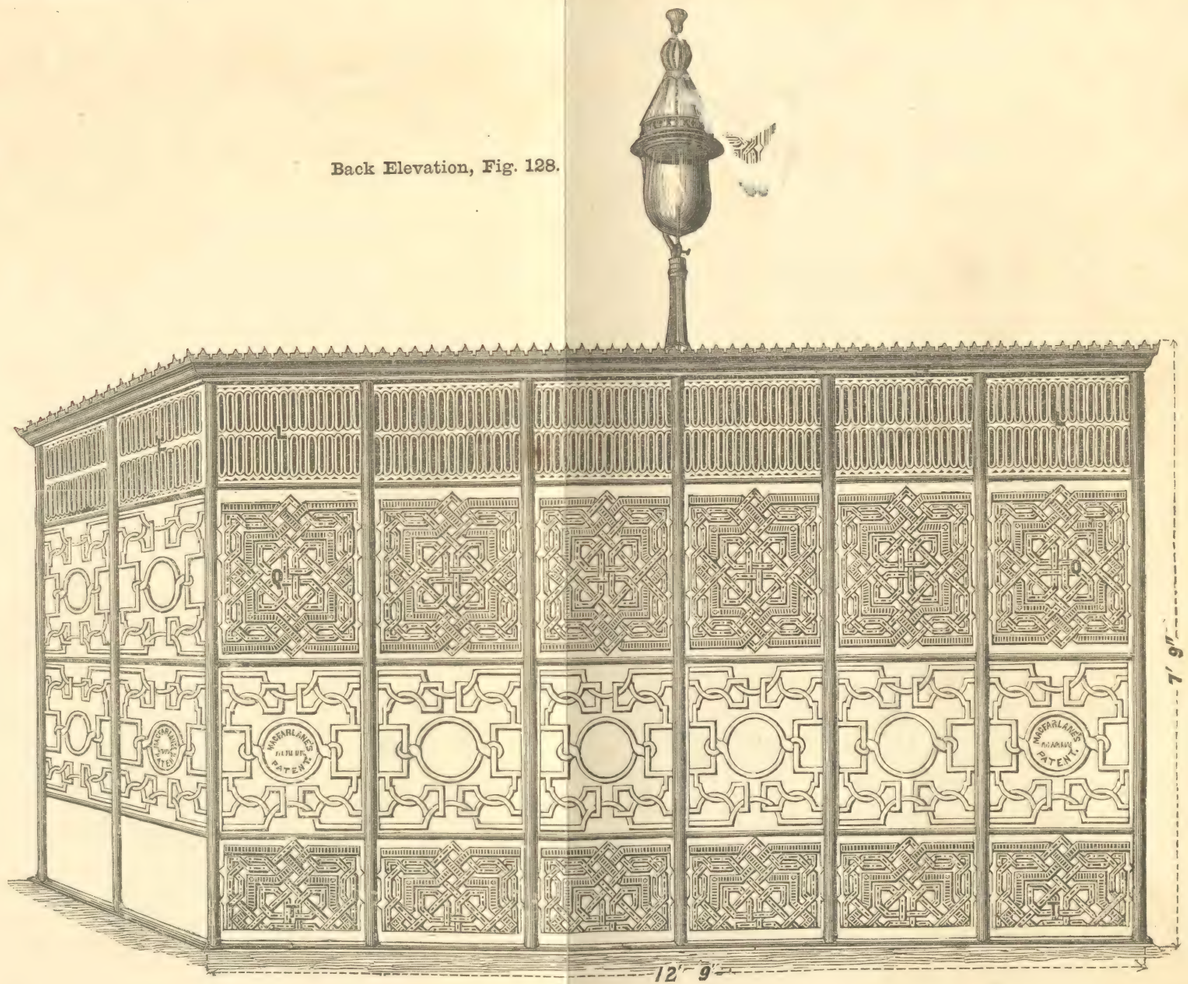
Front Elevation, Fig. 126.



Plan, Fig. 127.



Back Elevation, Fig. 128.



Prices, complete, ready for fitting up, (exclusive of Lamp and gas fittings,) delivered in Glasgow:—

For 3 Persons,	23	5	0	For 6 Persons,	£41	0	0
" 4 "	30	12	0	" 8 "	54	8	0
" 5 "	36	2	6	" 10 "	67	16	0

Figs. 126, 127, and 128, represent a No. 6 URINAL RANGE for Four Persons. The apparatus is of the same construction as No. 4, but it has the additional advantage of being entirely enclosed within walls. When the Range is for three persons it has only one entrance; when required to accommodate any number more than three persons it has two entrances, as here shown.

No. 6 URINALS are intended to be fitted up in open situations unconnected with the surrounding buildings.

Scale, ½ inch—1 foot

MACFARLANE'S LAMPS.

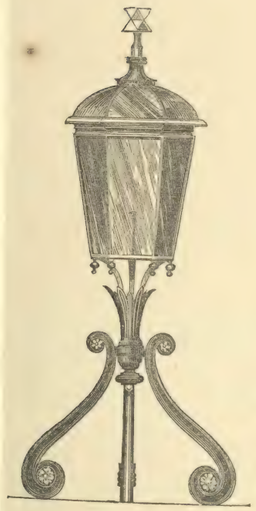
13 inch **GLOBE LAMP**, with Glass Cover, Standard, and Gas Fittings.

Fig. 129.

Price, complete, ready for fitting up, delivered in Glasgow,.....£2 2 0

Large Double Light **HEXAGON LAMP AND STANDARDS**, with Gas Fittings.

Fig. 32.



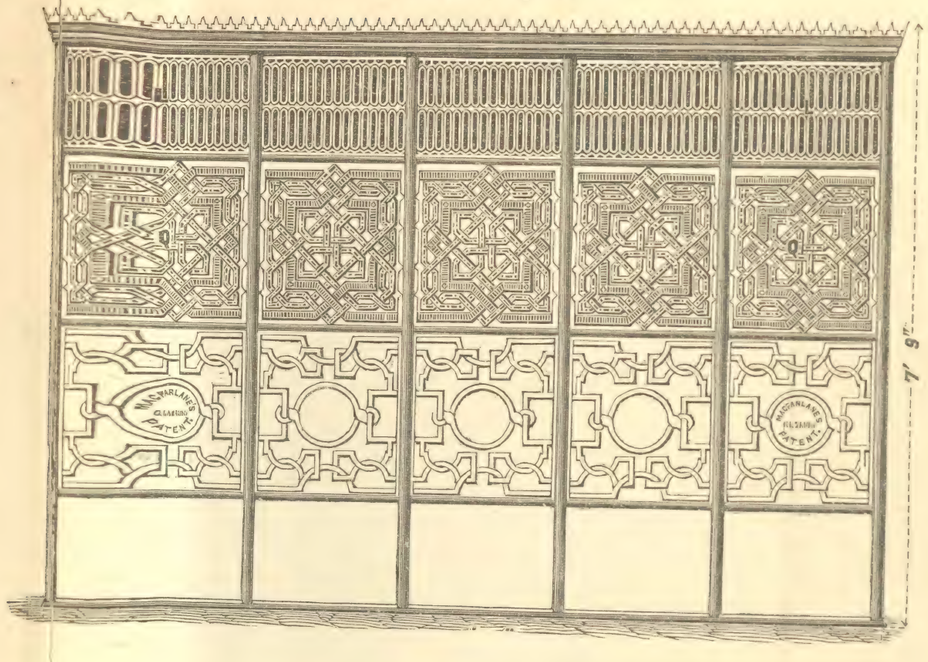
Large double light Hexagon Lamp and Standards, with gas fittings, as Fig. 32, ...£9 2 6
13 inch Globe Lamp, with Standards and gas fittings, as Fig. 32,.....£4 4 0
1 set of Standards only, ...£1 18 0

These LAMPS are suitable for being fitted up in connection with any of our public conveniences.

MACFARLANE'S PATENT.

ORNAMENTAL SCREEN (OR WALL)

Elevation, Fig. 15.

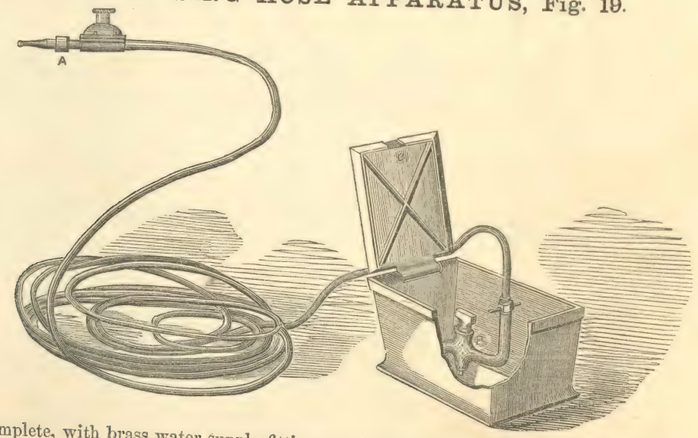


Prices, complete, ready for fitting up, delivered in Glasgow:—

2 feet long,.....	£1	
3 "	2	
4 "	3	
5 "	4	
6 "	5	
8 "	6	
10 "	8	
12 "	9	

Fig. 15 represents an iron ornamental SCREEN or WALL, for being fitted up in connection with sanitary appliances in front of entrances, &c., and can be made of any length to

CLEANSING HOSE APPARATUS, Fig. 19.



Prices, complete, with brass water supply fittings, and 15 feet of hose, delivered in Glasgow, £1 13 6

Fig. 19 represents a CLEANSING HOSE with WATER JET A on the one end, and the other end fitted with Union coupling for attaching to corresponding screw on the nose of the stopcock, B; the later is placed underground, to protect it from frost, and is enclosed by cast iron casing, with a hinged cover, *e*.

This apparatus is for washing Public Conveniences, Urinals, Courts, &c. A great saving of water and time is thus effected, besides being much better done than by the old system of buckets, &c. One Elastic Hose and Jet does for a whole district, the dustman or attendant carries it over his arm from one place to another, until the whole are gone over.

Scale, 1½ inch—1 foot.

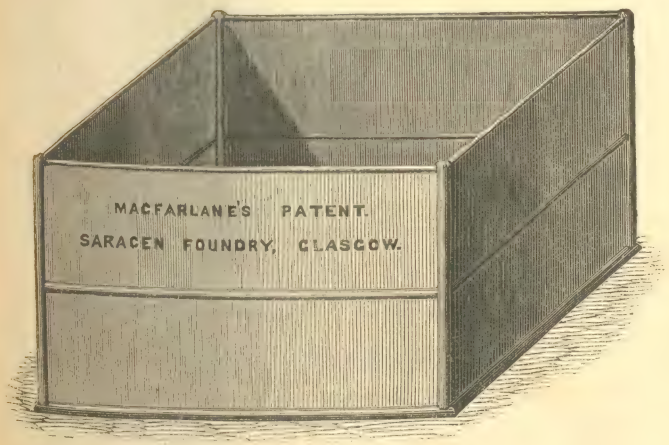
PART VIII.

ASH BINS.

Too little attention has hitherto been bestowed on this common but necessary appliance; generally huge unsightly erections have been built of stone or brick, occupying a space of ground altogether beyond what is necessary, thus putrefying matter has been stored up for months, in the midst of a dense population, to the great detriment of the health of the community. Local authorities are now becoming alive to this evil, and are insisting more imperatively upon the daily removal of all garbage from amongst the people every twenty-four hours; there are many different modes of collecting and removing the ashes, garbage, &c., of a community, and much depends upon the construction of the buildings; of this, however, we are certain, that no system is worthy of attention that has not for its object a daily removal; the subject is one that has for several years received much of our attention, during which time we have introduced very extensively our cast iron Ash Bin appliances, having, within the last three years, fitted up in Glasgow alone, under the sanction of the local authorities, accommodation of this kind for upwards of thirty thousand of the population, with the most marked success.

In all cases we consider a cast iron Ash Bin the best, both for its non-absorbent properties, strength, and the obstruction it offers to vermin of every sort; the size should not be much more than what is necessary for the collection of a day's garbage; of easy access to the persons using it, and, at the same time, convenient for the dustman emptying it, its shape and construction will depend on various circumstances; the small piece of ground occupied by these Ash Bins is a matter of considerable moment, 8 square feet being sufficient for a population of several hundreds, whereas, by the old system of dungsteads, 50 square feet on an average was required.

No. 1 ASH BIN, Fig. 130.



Prices, complete, ready for fitting up, delivered in Glasgow:—

21 × 30 × 54 inches,	£2	13	0
24 × 30 × 54, "	3	0	0
30 × 30 × 54, "	3	16	0
36 × 30 × 54, "	4	6	6

Fig. 130 represents our No. 1 Ash Bin. It is composed of cast iron, and is water-tight. The sole-plate is on a level with the ground, and requires no foundation.

Scale, ½ inch—1 foot.

Fig. 131.

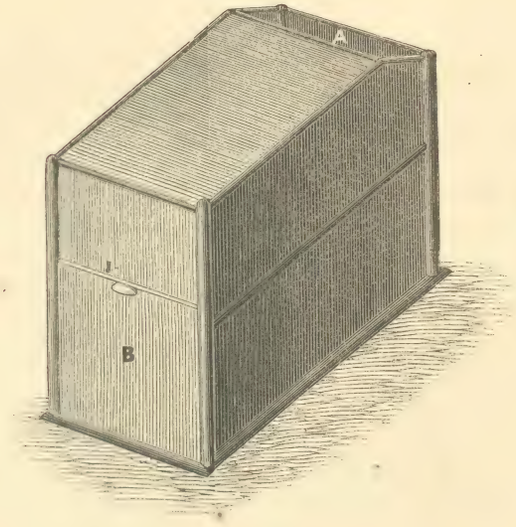
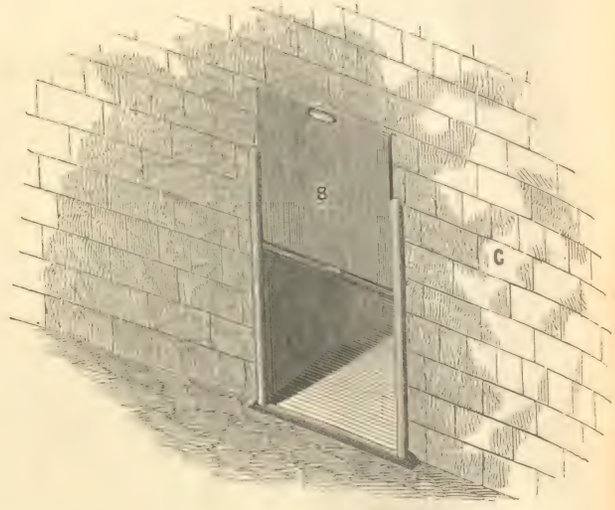


Fig. 132.

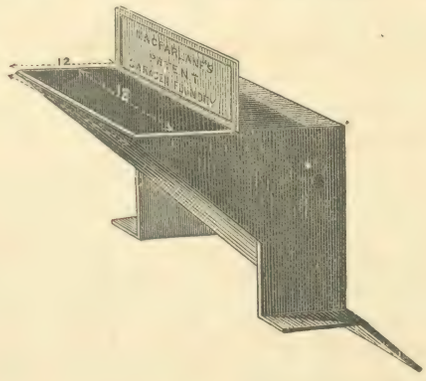


Prices, complete, ready for fitting up, delivered in Glasgow:—

21 inches wide by 30 inches high and 24 inches long,	£2 15 0
21 inches wide by 30 inches high and 30 inches long,	3 0 0
21 inches wide by 30 inches high and 36 inches long,	3 7 0

Fig. 131 represents a perspective view of No. 4 Ash Bin, and Fig 132 is a front view of the same, showing the wall into which it is built. The apparatus consists of an oblong cast iron case, wholly enclosed, with the exception of an oblong opening at the back A, 5½ inches wide, and in the front, a slide door B, opening upwards, attached to which is a lock. This description of Ash Bin is constructed for being built into the wall at the rear of the premises, the ashes, garbage, &c., is discharged into the Bin by the opening A, and the dustman, by opening the slide door B, has access to the interior of the Bin for emptying it from the outside without coming into the premises.

No. 3 ASH BIN HOPPER. Fig. 38.



£0 19 6

Fig. 38 represents a perspective view of No. 3 Ash Bin Hopper.

No. 4 ASH BIN DOOR. Fig. 40.

Prices, complete, delivered in Glasgow:—

£0 10 0

Fig. 40 represents a front view of No. 4 Ash Bin Door, built into a wall.

This Ash Bin Hopper and Ash Bin Door are suitable for discharging into an Ash Bin that may be placed on the opposite side of the wall. Various modifications of these appliances can be made to suit peculiar situations.

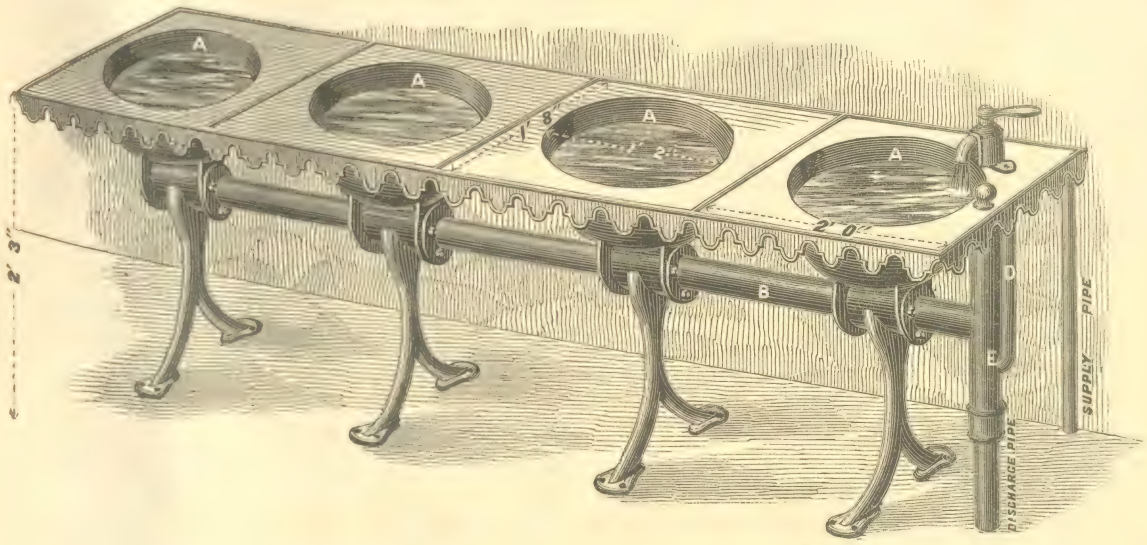
Scale, ½ inch—1 foot.

PART IX.

Ablution and Drinking Appliances, Embracing Wash Hand and Foot Ranges, Baths, Bathing Shades, Drinking Fountains, and Water Trough Appliances.

No. 3 WASH HAND RANGE *for Four Persons.*

Fig. 133.



Prices, complete, ready for fitting up, with brass water supply fittings, delivered in Glasgow:—

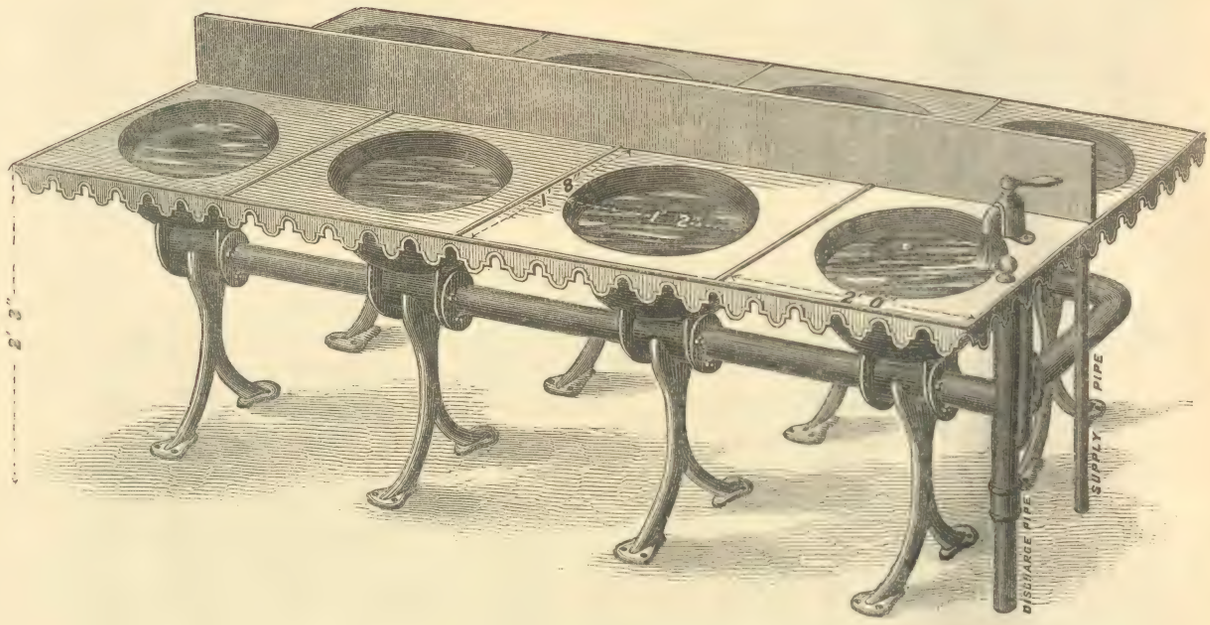
For 2 Persons,	£2	6	0	For 6 Persons,	£5	13	6
" 3 "	3	4	6	" 8 "	7	8	0
" 4 "	4	2	6	" 10 "	9	2	6
" 5 "	4	18	6	" 12 "	10	17	6

Fig 133 represents a No. 3 WASH HAND RANGE. The apparatus consists of a range of basins A, with discharge opening in bottom, connected together by means of the horizontal pipe B; attached to this is an overflow waste-pipe D, and discharge pipe E, the handle of which rests on the top plate, the basins are filled simultaneously by means of a $\frac{3}{4}$ inch tap, the whole is supported by standards fastened to the wall and floor.

Scale, $\frac{1}{2}$ inch—1 foot.

No. 4 DOUBLE WASH HAND RANGE *for Eight Persons.*

Fig. 134.



Prices, complete, with brass water supply fittings, delivered in Glasgow:—

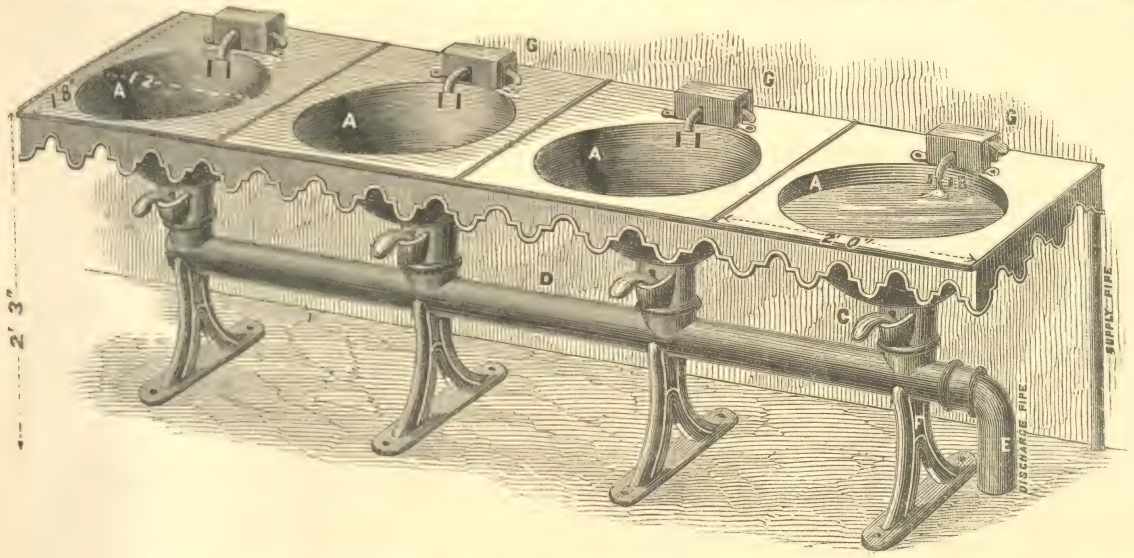
For 2 Persons,	£2	13	6	For 8 Persons,	£8	18	6
" 4 "	4	16	6	" 10 "	11	1	0
" 6 "	6	16	0	" 12 "	13	2	0

Fig 134 represents a No. 4 DOUBLE WASH HAND RANGE. Its leading features are the same as Fig. 133, for many purposes it has considerable advantages, as from its construction it is suitable to stand out isolated on the floor.

Nos. 3 and 4 are the cheapest of our Wash Hand Ranges, are specially adapted for establishments where a stated time is set apart for ablutionary purposes, their simplicity of construction, the little water they require, and their substantiality, (being wholly composed of cast iron) render them peculiarly suitable for public use.

Scale, ½ inch—1 foot.

MACFARLANE'S PATENT. No. 1 WASH HAND RANGE, *for Four Persons.* Fig. 25.

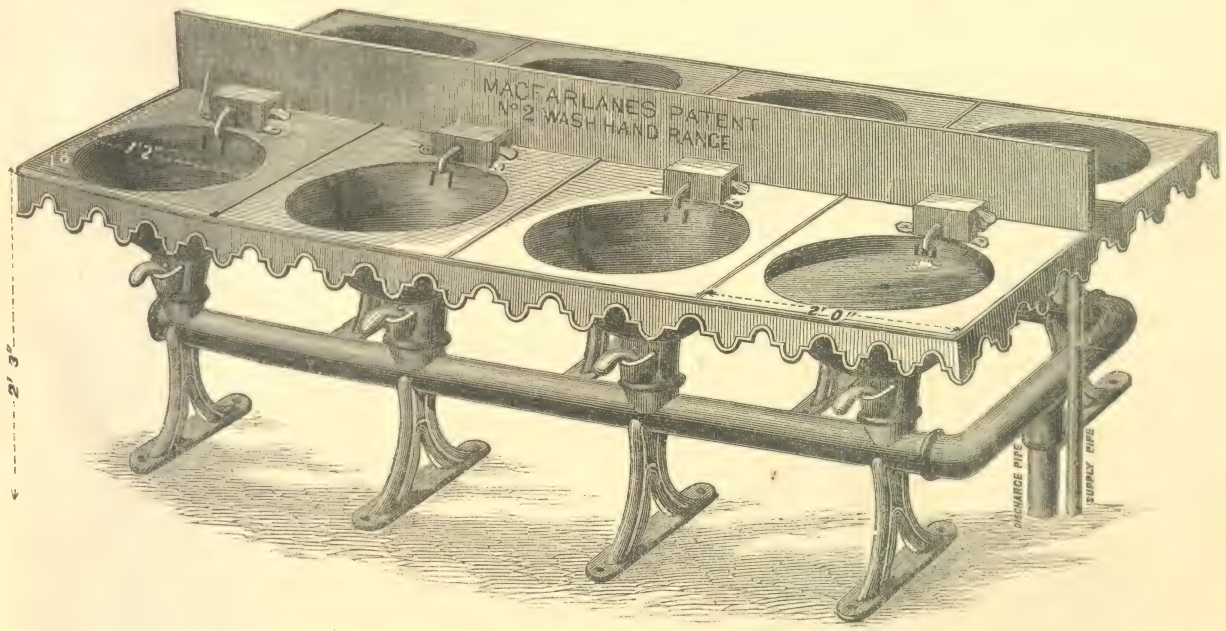


Prices, complete, with brass water supply fittings, delivered in Glasgow:—

For 2 Persons,	£3	2	0	For 6 Persons,	£8	4	6
" 3 "	4	8	9	" 8 "	12	2	6
" 4 "	5	17	6	" 10 "	14	17	6
" 5 "	7	8	0	" 12 "	17	12	6

Fig. 25 represents a No. 1 Wash Hand Range. The apparatus consists of basins A, each having an overflow waste pipe B, leading to the discharge pipe. In the bottom of each basin is a moveable stopper, which being acted on by the lever C, allows the water to pass into the discharge pipe D, and from thence by the drop pipe E to the sewer. A self-closing bib cock is under the covers G. The water supply pipe runs along the back, and the whole is supported by standards F, and fastened to the wall and floor.

No. 2 DOUBLE WASH HAND RANGE, *for Eight Persons.* Fig. 46.



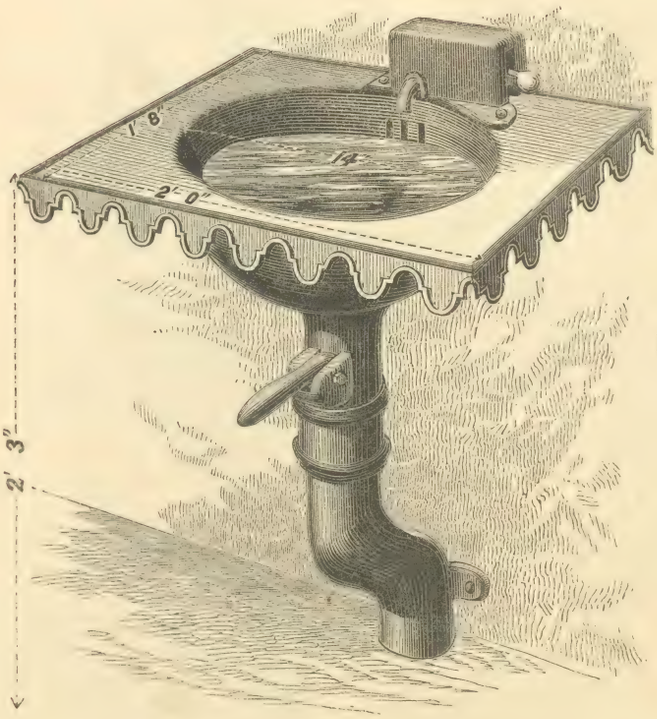
Prices, complete, with brass water supply fittings, delivered in Glasgow:—

For 2 Persons,	£3	8	6	For 8 Persons,	£13	5	0
" 4 "	6	11	6	" 10 "	16	12	3
" 6 "	10	2	6	" 12 "	19	17	0

Fig 46 represents a No. 2 Double Wash Hand Range. Its leading features are the same as Fig. 25, and for many purposes it has considerable advantages; as from its construction it is suitable to stand out isolated on the floor.

No. 5 WASH HAND STAND.

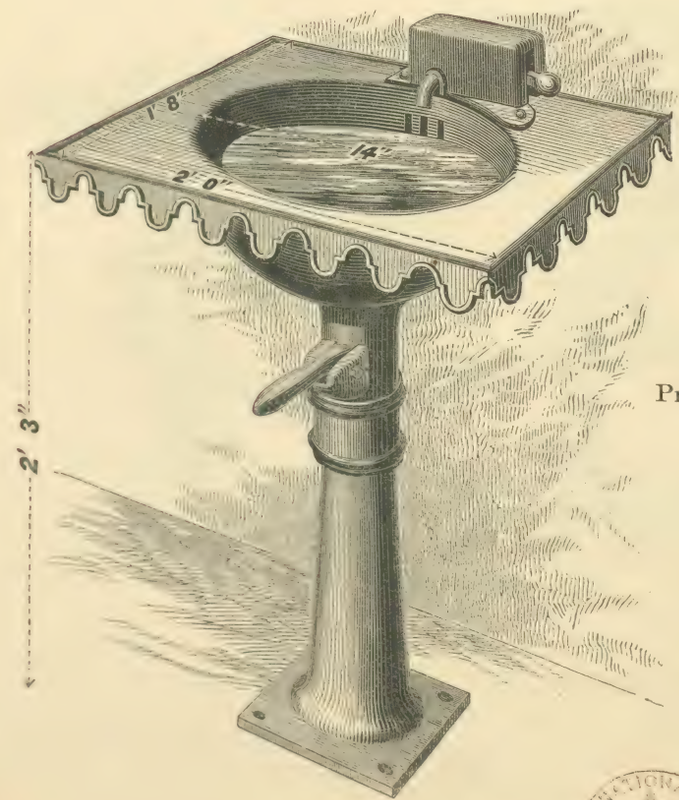
Fig. 135.



Price, complete, with brass water supply fittings, delivered in Glasgow, £1 6 0

No. 6 WASH HAND STAND.

Fig. 136.

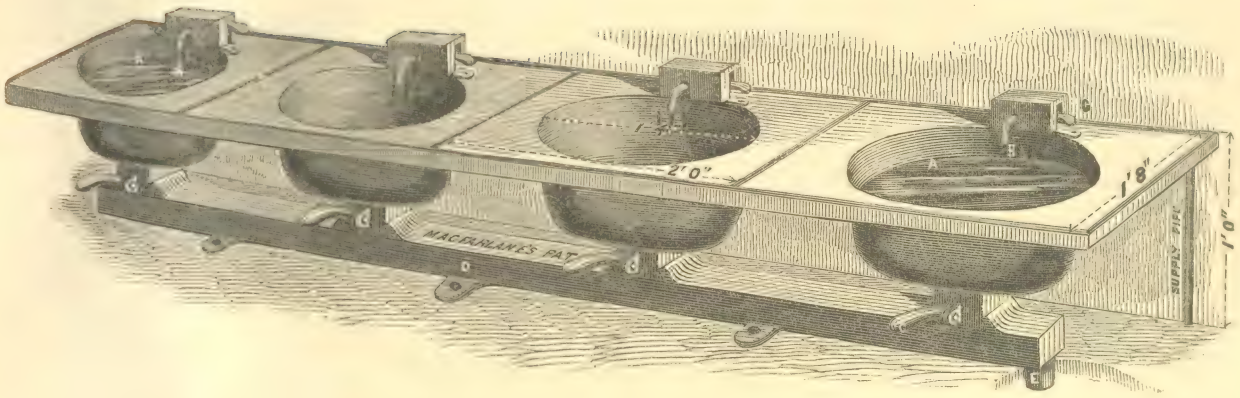


Price, complete, with brass water supply fittings, delivered in Glasgow, £1 12 3

MACFARLANE'S PATENT.

No. 1 WASH FOOT RANGE.

Fig. 27.



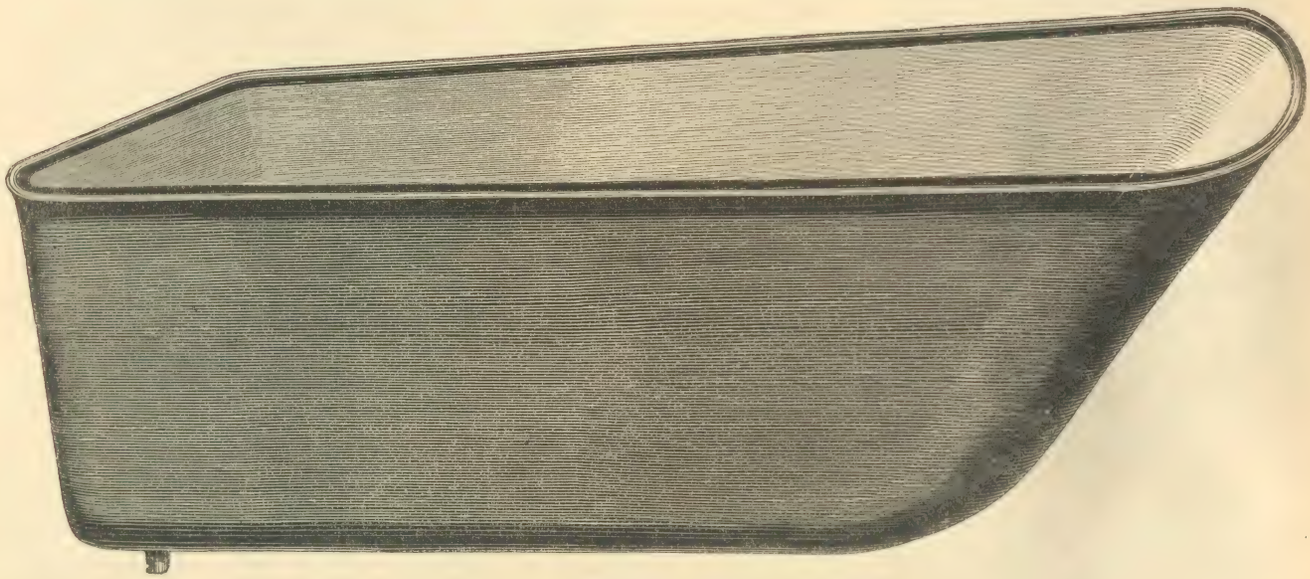
Prices, complete, with brass water supply fittings, delivered in Glasgow:—

For 1 Person,	£1	6	6	For 5 Persons,	£7	10	0
" 2 "	2	19	0	" 6 "	9	1	6
" 3 "	4	8	6	" 8 "	12	4	0
" 4 "	6	0	0	" 10 "	15	5	0

Fig. 27 represents a WASH FOOT RANGE. The apparatus consists of basins A, 16 inches diameter, each having an overflow waste pipe B, leading to the discharge pipe. In the bottom of each basin is a moveable stopper, which, being acted on by the lever C, allows the water to pass into the discharge pipe D, and from thence by the drop pipe E to the sewer. Self-closing bib cock under the covers G; and the whole is fastened to the floor and wall by screws.

No. 1 BATH.

Fig. 71.



Prices, delivered in Glasgow:—

LENGTH.		BREADTH AT SHOULDERS.		DEPTH.		
5 feet 0 inches	×	2 feet 1 inches	×	1 foot 8 inches,	£1	18 0
5 " 6 "	×	2 " 2 "	×	1 " 10 "	2	5 0
6 " 0 "	×	2 " 3 "	×	2 " 0 "	2	12 0

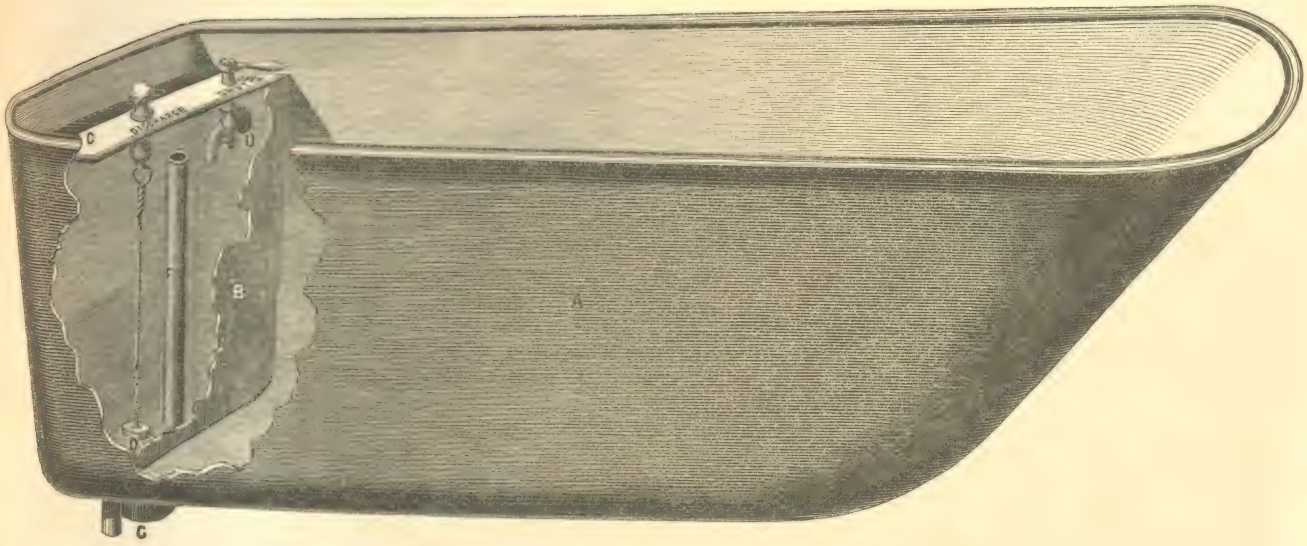
Fig. 71 represents a No. 1 BATH, made of Cast Iron, and all in one piece, being sloped and rounded at the shoulders and the corners, to give ease and comfort to the bather, as well as to economise the consumption of water.

The supply and discharge of water to this Bath may be furnished either by a common tap standing out from the wall above the Bath, or by the usual apparatus of supply and discharge entering from the bottom.

Scale, 1 inch—1 foot.

No. 3 BATH.

Fig. 149.



Prices, complete, with brass water supply and discharge apparatus, delivered in Glasgow:—

LENGTH.	BREADTH AT SHOULDERS.	DEPTH.	
5 feet 0 inches	× 2 feet 1 inches	× 1 foot 8 inches,	£3 8 6
5 " 6 "	× 2 " 2 "	× 1 " 10 "	3 15 6
6 " 0 "	× 2 " 3 "	× 2 " 0 "	4 2 6

With hot water supply fittings 11s. extra.

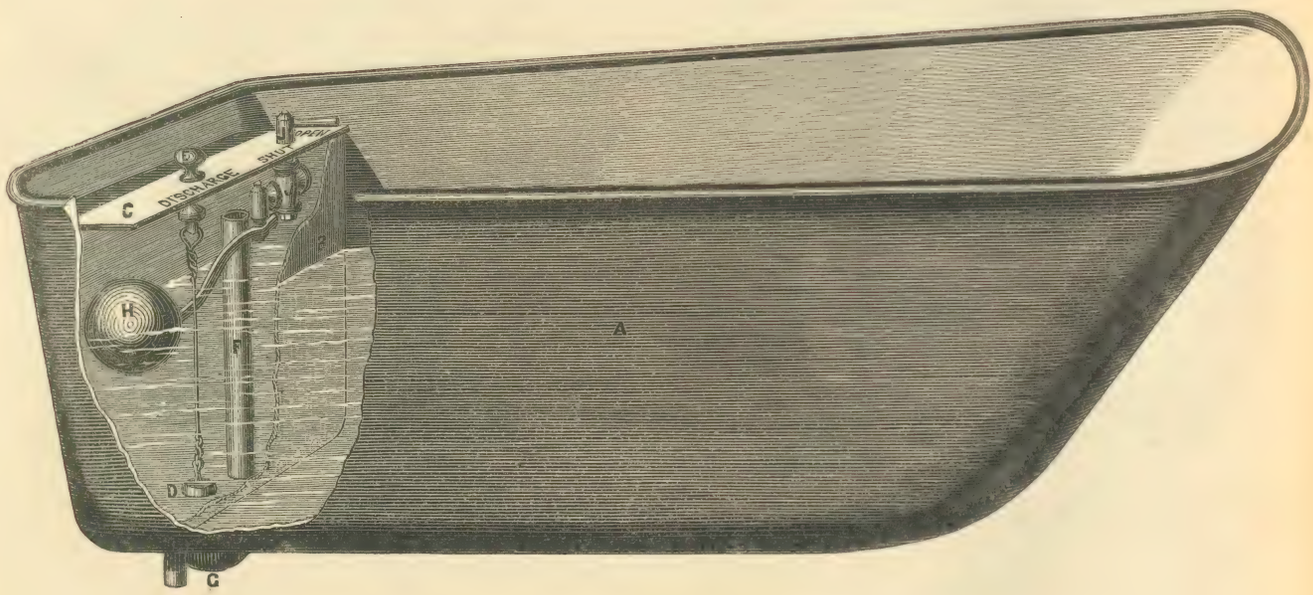
Fig. 149 represents a BATH in every respect the same as Fig. 71, but with water supply and discharge apparatus complete, ready for joining to supply pipes and drains. The whole of the working apparatus is in a separate compartment at the foot of the Bath, (and within the Bath proper) enclosed by a division plate B, and cover C. The apparatus itself consists of a discharge valve D in the bottom, wrought by a handle, with a stand up waste pipe F; both of these are connected with, and discharge through a syphon trap G. The water supply apparatus consists of a ½ inch brass tap.

The patentees would call special attention to the simplicity and complete security of this Bath against the occurrence of breakage or flooding.

Scale, 1 inch—1 foot.

No. 2 BATH.

Fig. 72.



Prices, complete, with brass water supply and discharge apparatus, delivered in Glasgow:—

LENGTH.	BREADTH AT SHOULDERS.	DEPTH.	
5 feet 6 inches	× 2 feet 2 inches	× 1 foot 10 inches,	£4 7 6
6 " 0 "	× 2 " 3 "	× 2 " 0 "	£4 14 6

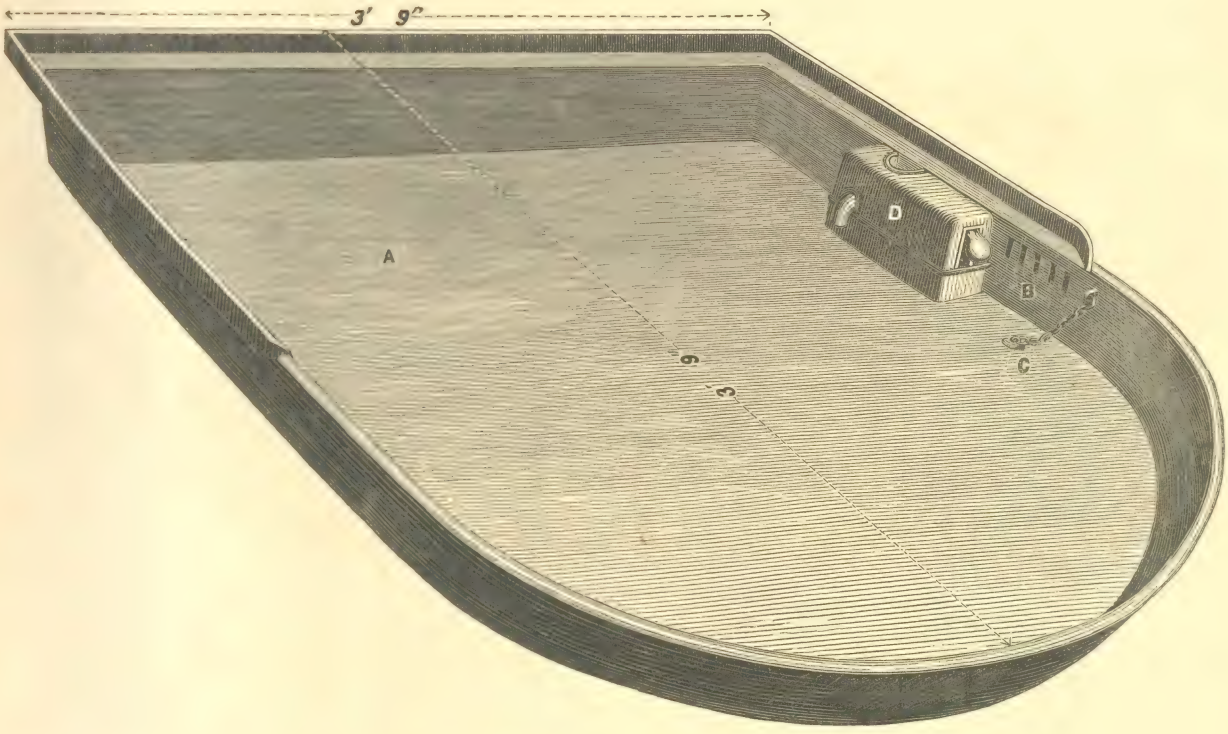
Fig. 72 represents a BATH in every respect the same as Fig. 149, but with the addition of having attached to the supply tap a self-acting float-ball and tap, to prevent the waste of water.

When the Bath requires to be filled, the water supply tap J is opened in the usual manner, the water then passes through this and the float-ball tap H into the Bath. When the Bath is filled to the proper height, the water then acts upon the float-ball H, and shuts the float-ball tap, thus completely preventing that excessive waste of water, so generally complained of.

Scale, 1 inch—1 foot.

No. 4 SPONGING BATH.

Fig. 137.



Prices, complete, with brass water supply fittings, delivered in Glasgow, £2 16 0

Fig. 137 represents a No. 4 Sponging Bath of cast iron in one piece. The water is supplied by self-acting tap, enclosed by cover D, and connected to lead pipe. An overflow waste pipe B is at the side, and the discharge plug C is connected to the same in the bottom of the Bath. A raised edging at the back and two sides stands up from the Bath proper, within which the lining is intended to be placed. This Bath will be found admirably suited for public establishments, they occupy little room, and can be placed in ranges close to each other, divided off by partitions.

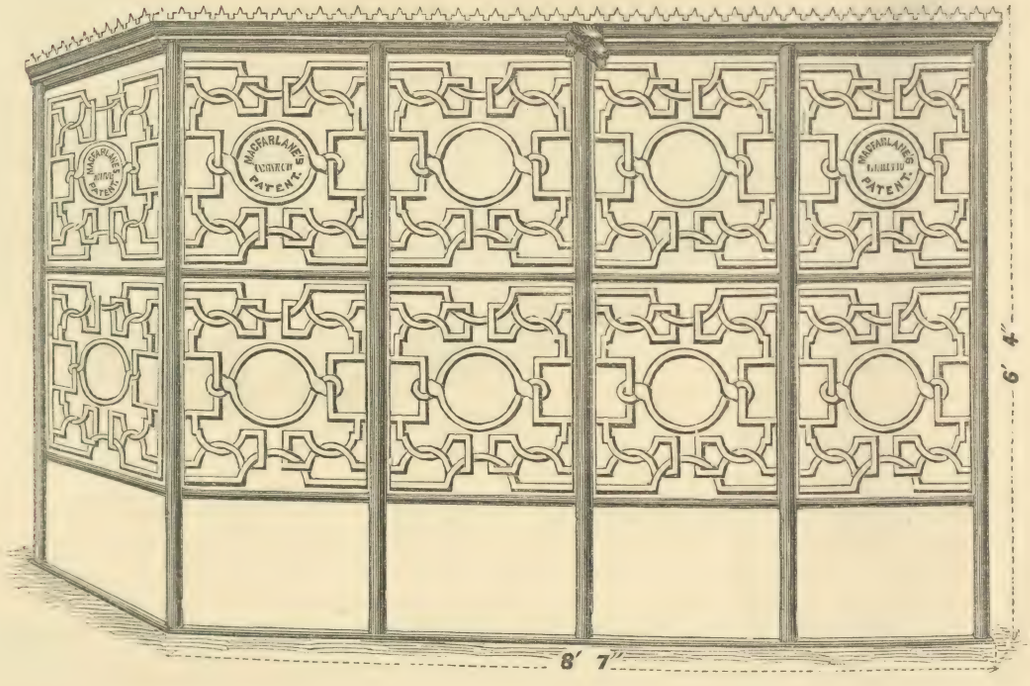
Scale, 1 inch—1 foot.

BATHING SHADES.

The extension of public parks is an evidence of the attention now being paid to all that concerns the social elevation of the masses; and that out-door recreation and amusement has this tendency, there cannot be a doubt. Amongst other recreations, that of swimming is perhaps one of the most valuable. Our Bathing Shades are intended for erection along the banks of a river or other water. They give privacy to the bather, protect his clothes, and afford shelter from the weather. They are simple, strong, and imperishable, being wholly composed of cast iron.

No. 1 BATHING SHADE RANGE, *for Four Persons.*

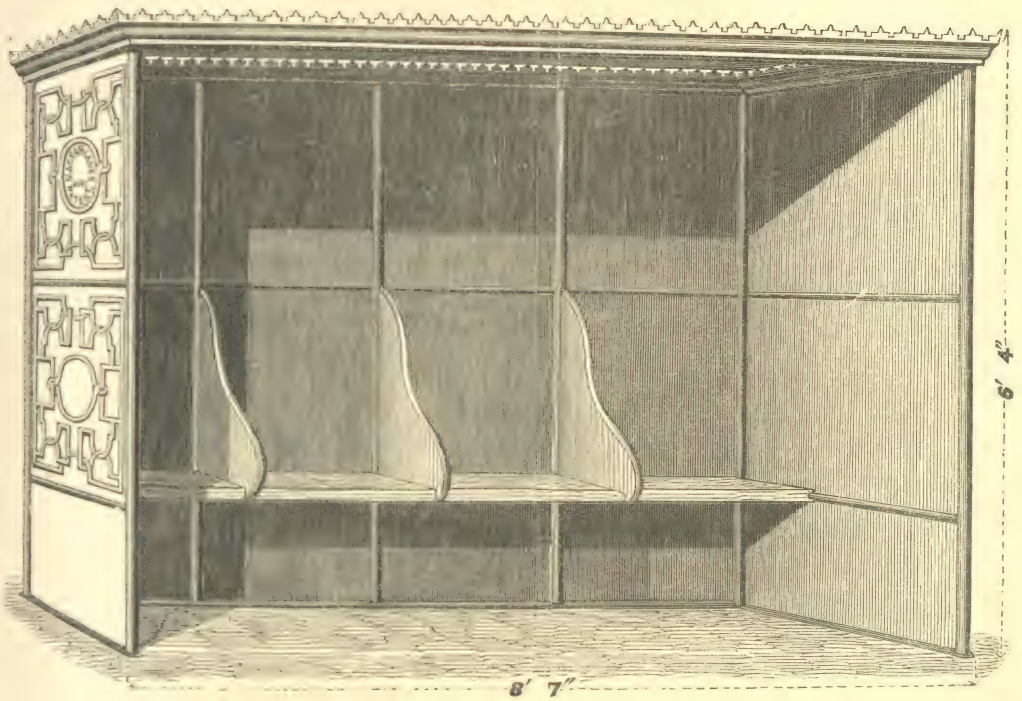
Back Elevation, Fig. 138.



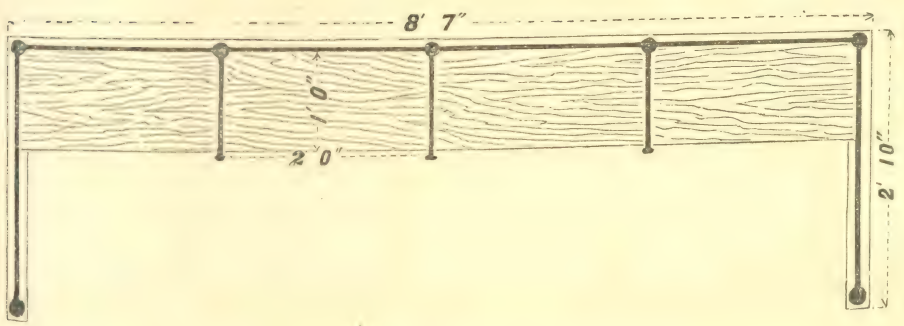
Prices, complete, ready for fitting up, goods delivered in Glasgow:—

For 1 Person,	£4	10	0	For 5 Persons,	£14	3	0
„ 2 „	7	15	0	„ 6 „	16	6	0
„ 3 „	9	15	0	„ 8 „	20	0	0
„ 4 „	11	18	0	„ 10 „	24	5	0

Front Elevation, Fig. 139.



Plan, Fig. 140.



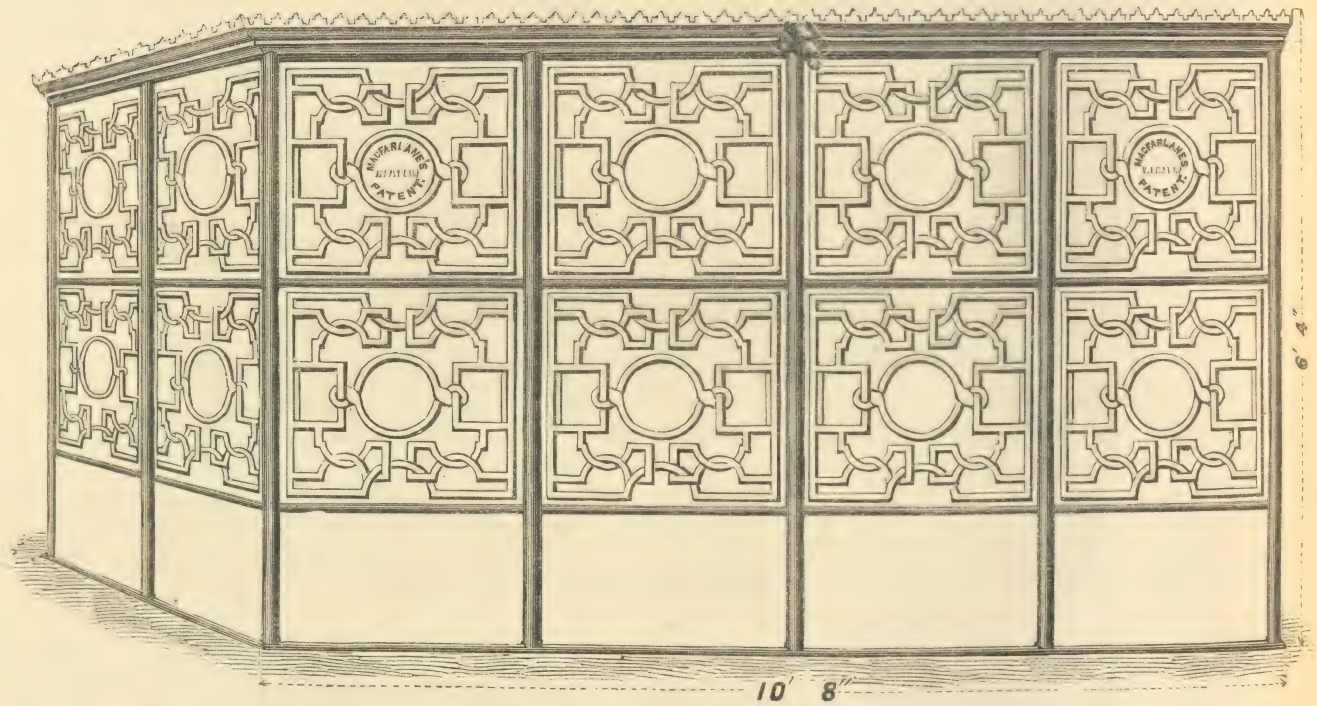
Figs. 138, 139, and 140 represent our No. 1 BATHING SHADE for Four Persons. It consists of an external ornamental cast iron wall and roof, with timber seat, and divisions between each seat.

They may be placed within high water mark without the slightest danger of being damaged, the manner by which the whole of the various pieces are dove-tailed together gives them great strength.

Scale, ½ inch—1 foot.

No. 2 BATHING SHADE RANGE *for Four Persons.*

Back Elevation, Fig. 141.

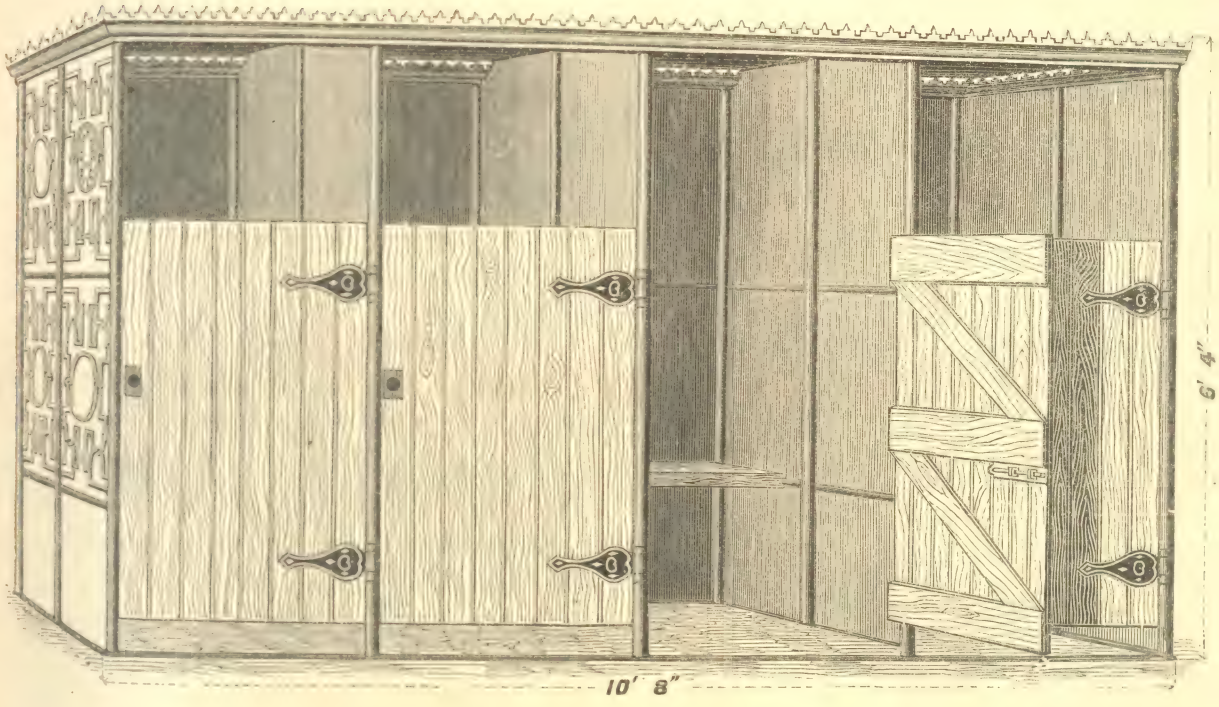


Prices, complete, ready for fitting up, goods delivered in Glasgow:—

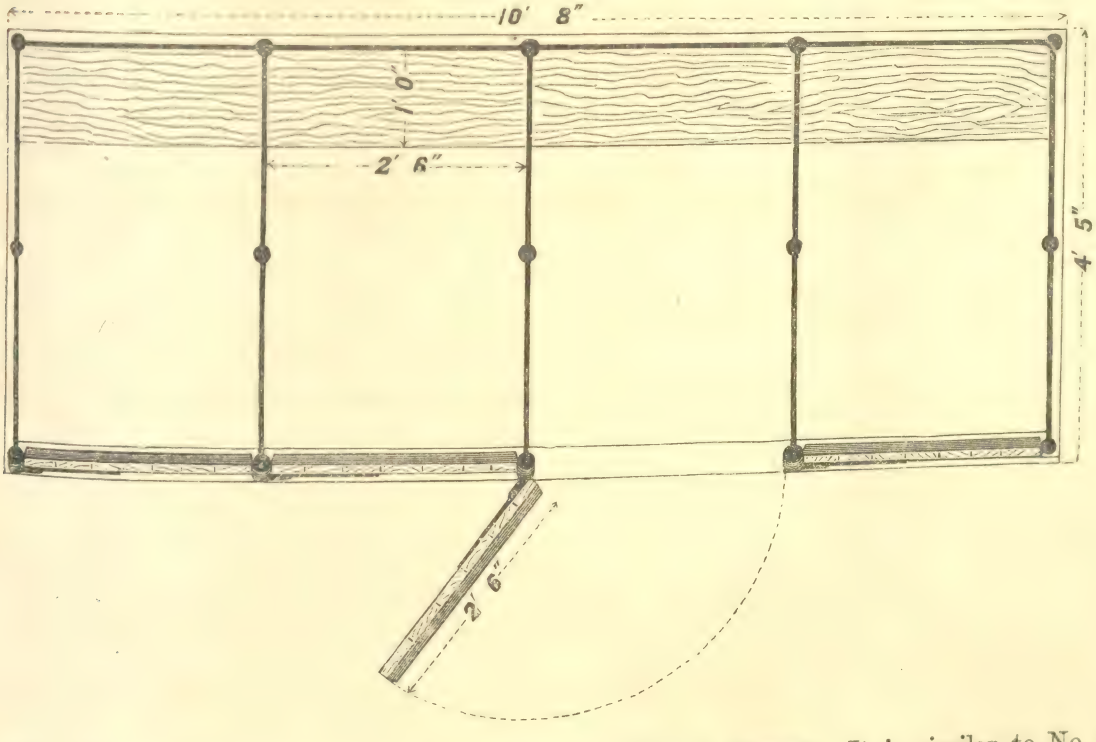
For 1 Person,	£8	0	0	For 5 Persons,	£30	0	0
" 2 "	14	0	0	" 6 "	35	8	0
" 3 "	19	5	0	" 8 "	45	12	6
" 4 "	24	19	6	" 10 "	57	0	0

Scale, ½ inch—1 foot.

Front Elevation, Fig. 142.



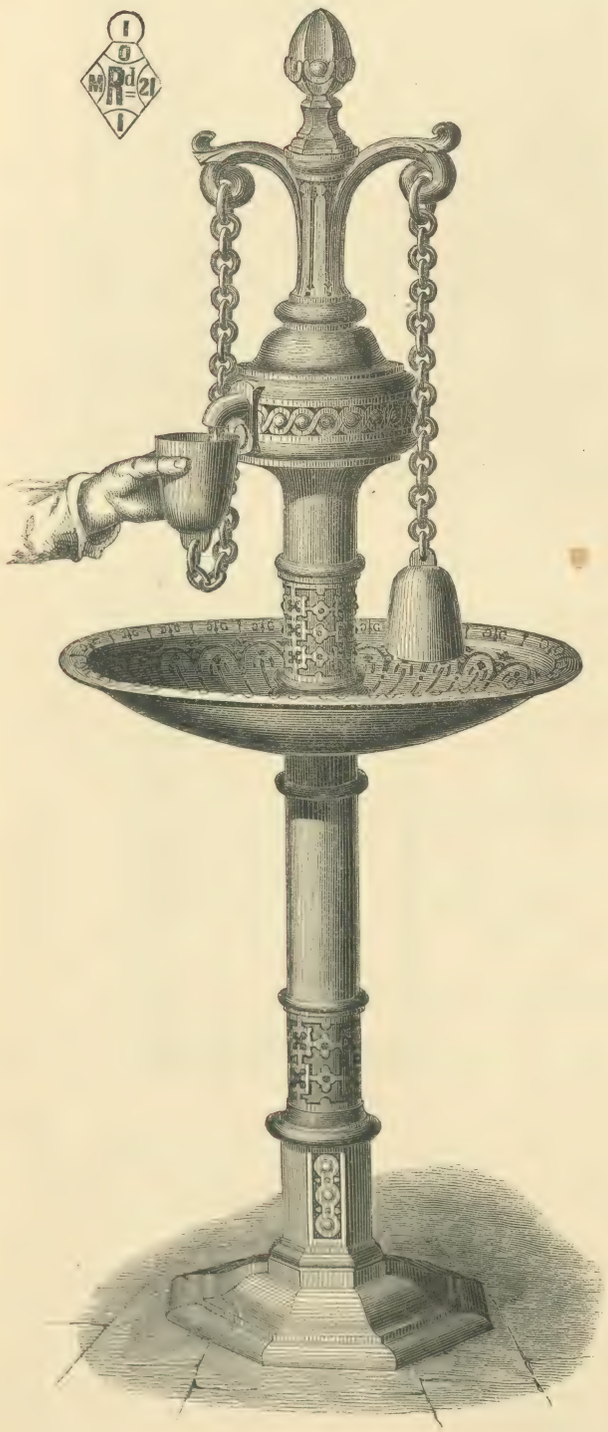
Plan, Fig. 143.



Figs. 141, 142, and 143 represent our No. 2 BATHING SHADE RANGE. It is similar to No. 1, but is divided into compartments, and fitted with wood doors, thus giving more privacy to the bather, the seats are 2 feet 6 inches wide.

DRINKING FOUNTAINS.

No. 4 FOUNTAIN, Fig. 144.



The erection of Drinking Fountains for the out-door population of our towns is an evidence of the improved taste and spirit of the age.

We have spared neither labour nor expense in perfecting these appliances, in order that they may be thoroughly suited for their intended purpose, we would call particular attention to the simple action of the water supply valve; by catching hold of the drinking cup, as shown in the illustration, and slightly pressing its lip against the valve stud, the water flows into it, and thus the operation of opening the valve and drinking is performed by one hand only. The drinking cups are warranted neither to break, bruise, nor rust, and do not come in contact with any part of the fountain or wall. An ample waste basin prevents the water from wetting the pavement.

None of our Fountains have dog-pans; practically, they do not use them, they become only receptacles for dirt, and keep the pavement in a mess of water.

Fig. 144 represents our No. 4 DRINKING FOUNTAIN, 4 feet 9 inches high, with basin 1 foot 10 inches diameter, and base 1 foot 2 inches for batting into stone.

Price, complete, with water supply tap and 2 cups, delivered in Glasgow:—

£2 18 6

Scale, 1½ inch—1 foot.

No. 5 DRINKING FOUNTAIN.

Fig. 64.

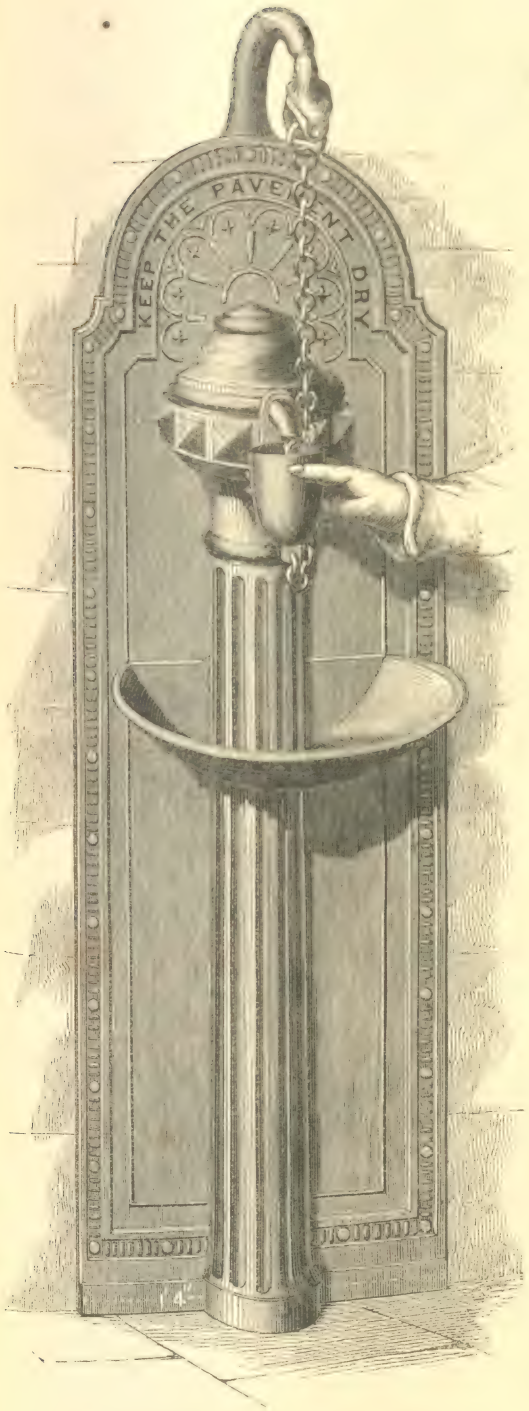


Fig. 64 represents our No. 5 Drinking Fountain, 4 feet 9 inches high by 1 foot 4 inches broad, with basin, &c., for fixing against wall.

Price, complete, with water supply tap and drinking cup, delivered in Glasgow:—

£2 5 0

Scale, 1½ inch—1 foot.

No. 6 DRINKING FOUNTAIN.

Fig. 145.

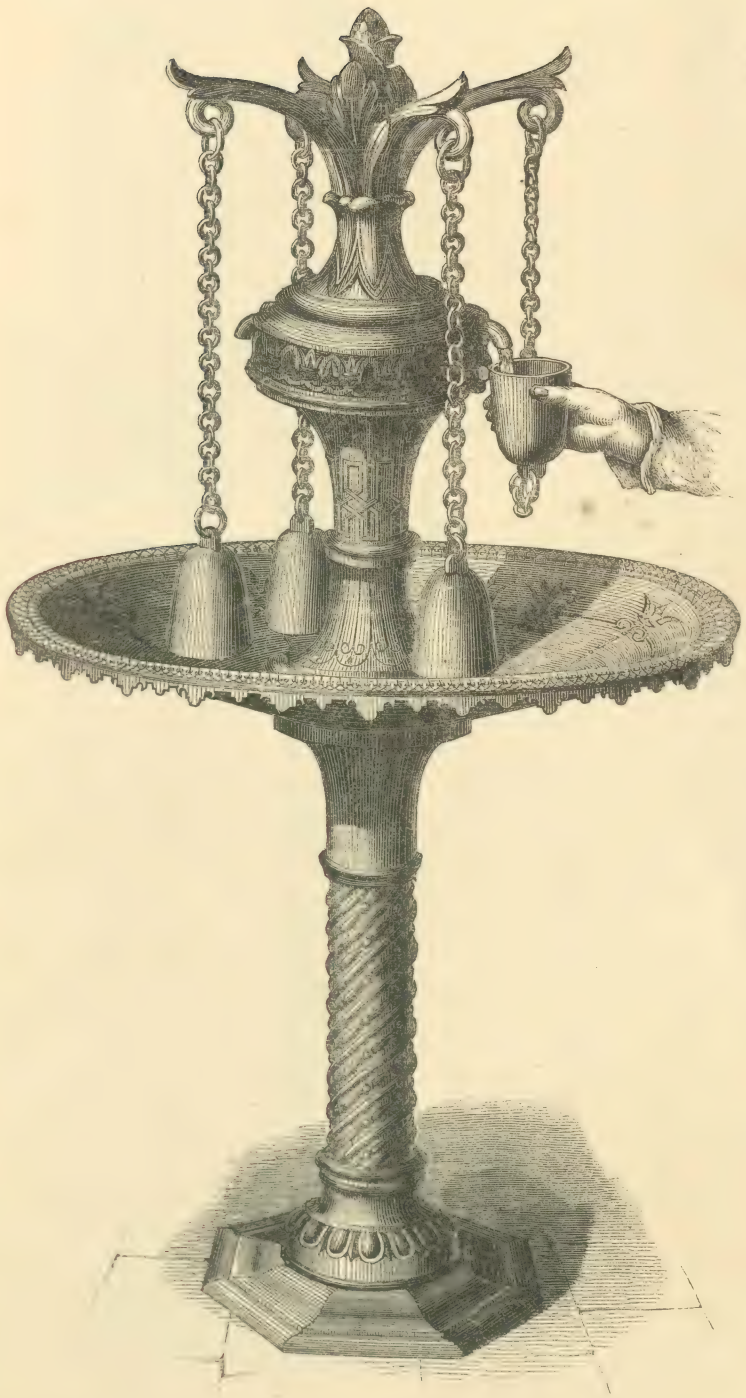


Fig. 145 represents our No. 6 DRINKING FOUNTAIN, 4 feet 11 inches high, with basin 2 feet 2 inches diameter, and base 1 foot 3 inches for batting into stone.

Price, complete, with two water supply taps and four drinking cups, delivered in Glasgow:—

£4 0 0

Scale, 1½ inch—1 foot.

MACFARLANE'S PATENT.

No. 7 DRINKING FOUNTAIN.

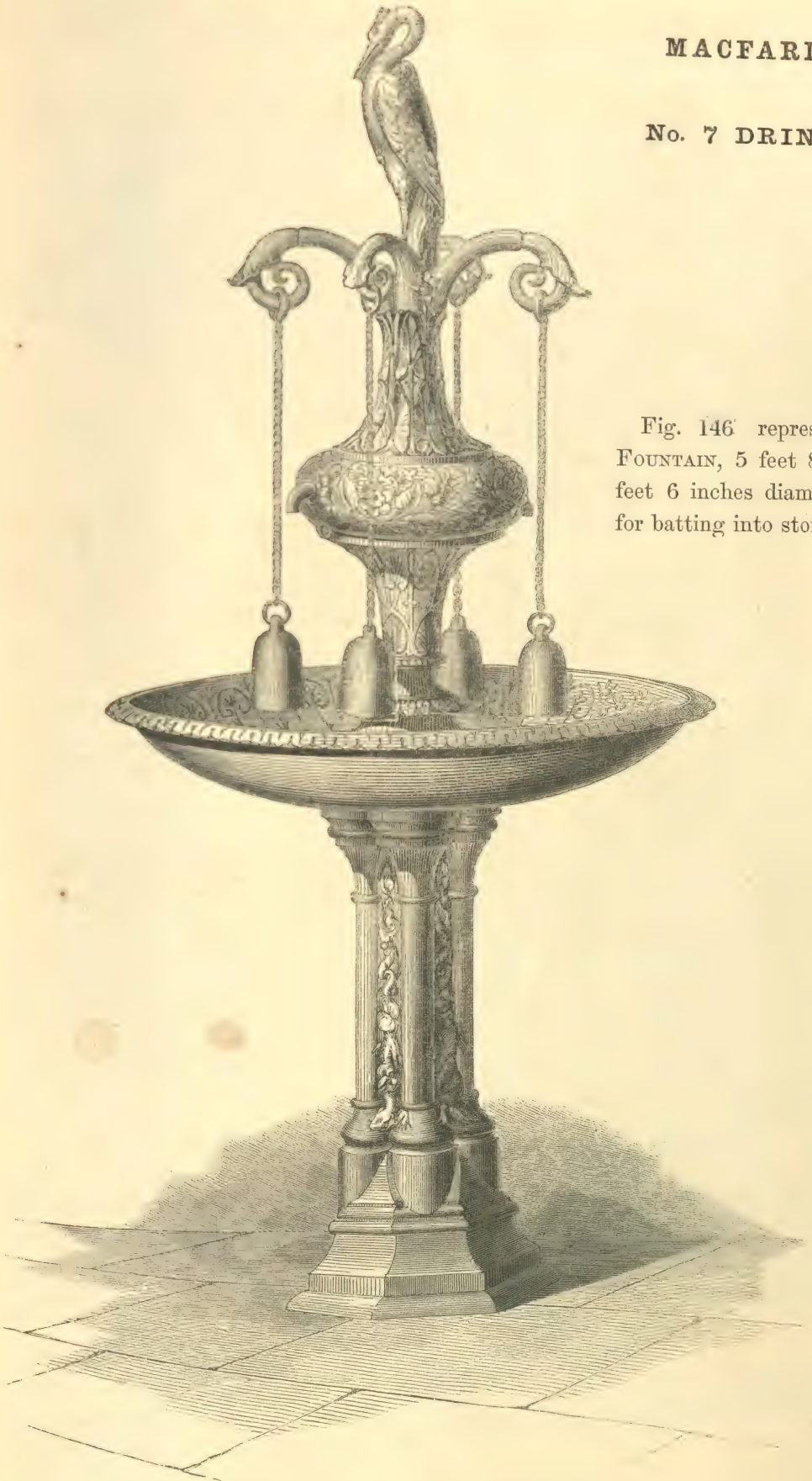


Fig. 146.

Fig. 146 represents our No. 7 DRINKING FOUNTAIN, 5 feet 8 inches high, with basin 2 feet 6 inches diameter, and base 1 foot 2 inches for batting into stone.

Price, complete, with two water supply taps and four drinking cups, delivered in Glasgow:—

£7 10 0

Scale, 1½ inch—1 foot.

No. 8 DRINKING FOUNTAIN.

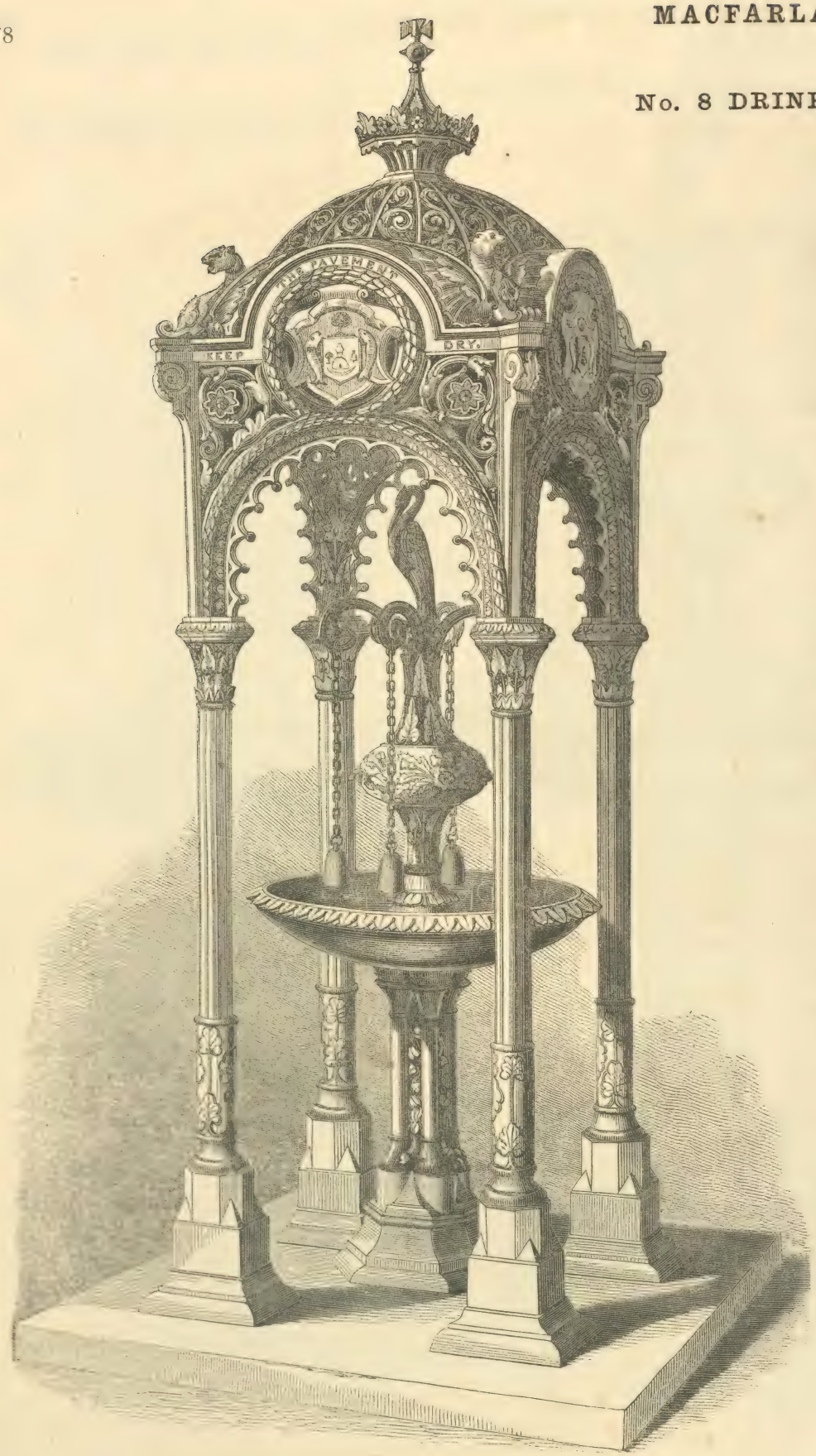


Fig. 147.

Fig. 147 represents our No. 8 Drinking Fountain, 9 feet 6 inches high. The structure consists of four columns, from the capitals of which consoles with griffin terminals unite with arches formed of decorated mouldings, encircling ornamental shields. On two of the sides provision is made for receiving an inscription; whilst on the other two sides is the useful monition, "Keep the pavement dry." Surmounting this is an open and highly enriched dome, the apex being occupied by a crown. Under the canopy stands the font, with basin 2 feet 6 inches in diameter.

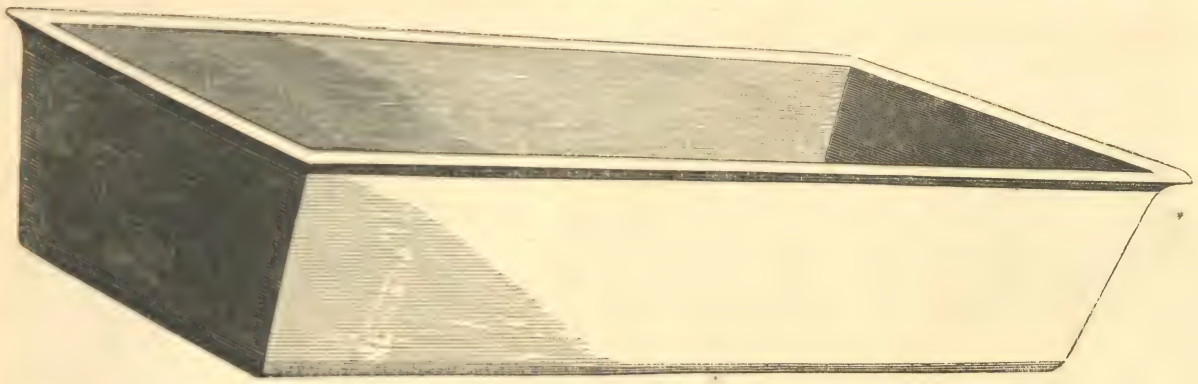
Price, complete, ready for fitting up, with four water supply taps, and four drinking cups, delivered in Glasgow:—

£27 10 0

Scale, 1 inch—1 foot.

No. 1 WATER TROUGH, Plain.

Fig. 22.

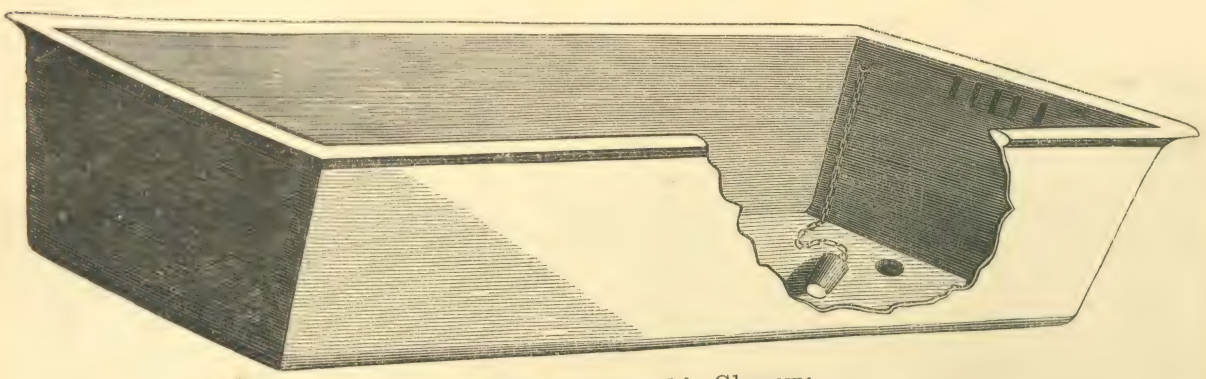


Prices, complete, delivered in Glasgow:—

LENGTH.	BREADTH.	DEPTH.				LENGTH.	BREADTH.	DEPTH.			
2 feet	× 1 foot 8 inches	× 1 foot,	£0	12	6	2 feet	× 2 feet	× 1 foot 4 inches,	£0	16	6
3 "	× 1 " 8 "	× 1 "	0	15	6	3 "	× 2 "	× 1 " 4 "	1	0	6
4 "	× 1 " 8 "	× 1 "	1	4	0	4 "	× 2 "	× 1 " 4 "	1	10	0
6 "	× 1 " 8 "	× 1 "	1	17	6	6 "	× 2 "	× 1 " 4 "	2	7	0
9 "	× 1 " 8 "	× 1 "	2	12	0	9 "	× 2 "	× 1 " 4 "	3	6	0
12 "	× 1 " 8 "	× 1 "	3	18	6	12 "	× 2 "	× 1 " 4 "	4	12	0

No. 2 WATER TROUGH with Overflow and Discharge Plug.

Fig. 21.



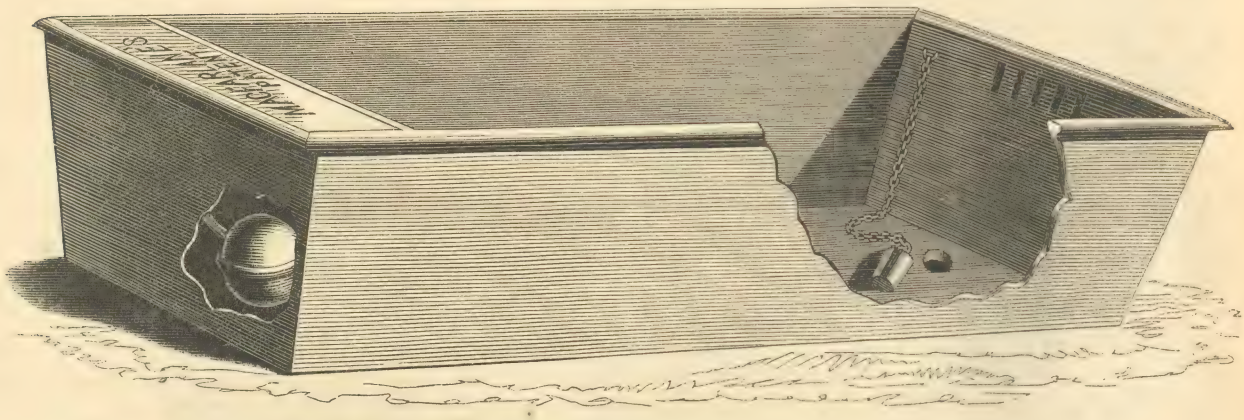
Prices, complete, delivered in Glasgow:—

LENGTH.	BREADTH.	DEPTH.				LENGTH.	BREADTH.	DEPTH.			
2 feet	× 1 foot 8 inches	× 1 foot,	£0	15	0	2 feet	× 2 feet	× 1 foot 4 inches,	£1	0	6
3 "	× 1 " 8 "	× 1 "	0	17	6	3 "	× 2 "	× 1 " 4 "	1	6	0
4 "	× 1 " 8 "	× 1 "	1	7	6	4 "	× 2 "	× 1 " 4 "	1	15	6
6 "	× 1 " 8 "	× 1 "	2	0	6	6 "	× 2 "	× 1 " 4 "	2	13	0
9 "	× 1 " 8 "	× 1 "	2	19	0	9 "	× 2 "	× 1 " 4 "	3	12	0
12 "	× 1 " 8 "	× 1 "	3	18	6	12 "	× 2 "	× 1 " 4 "	4	16	0

Fig. 21 represents a No. 2 WATER TROUGH. It has an overflow waste pipe at the end, and a discharge plug connecting with the same in the bottom of the Trough.

Scale, 1½ inch—1 foot.

No. 3 WATER TROUGH. Fig. 20.

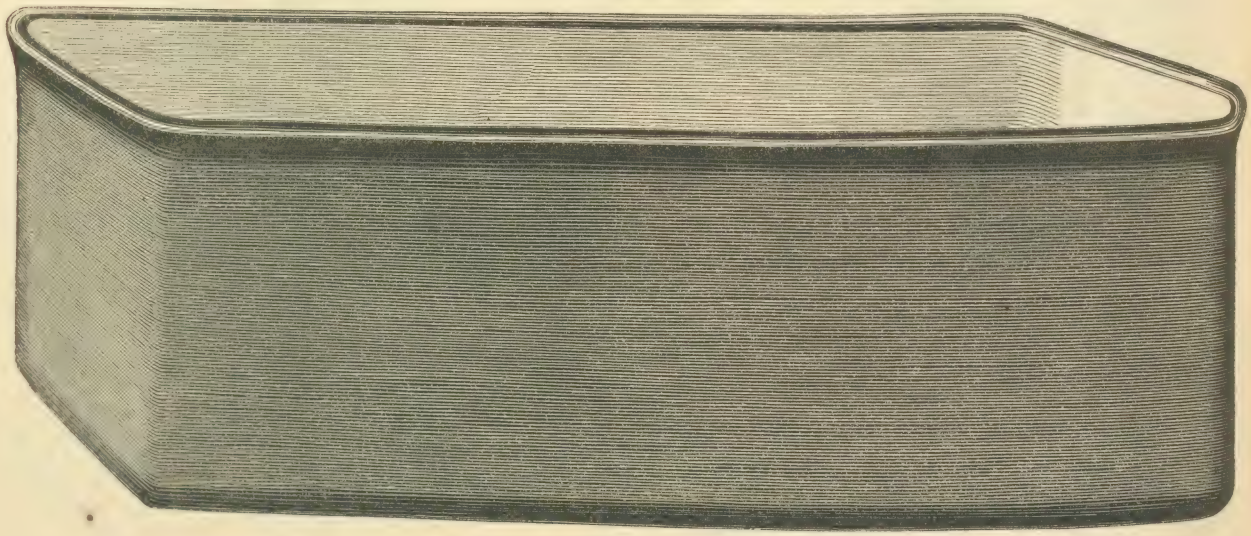


Prices, complete, with Brass Water Supply Fittings, delivered in Glasgow:—

LENGTH.	BREADTH.	DEPTH.				LENGTH.	BREADTH.	DEPTH.			
2 feet	× 1 foot	8 inches	× 1 foot,	£1	12 0	2 feet	× 2 feet	× 1 foot 4 inches,		£2	0 6
3 "	× 1 "	8 "	× 1 "	1	18 0	3 "	× 2 "	× 1 " 4 "		2	9 0
4 "	× 1 "	8 "	× 1 "	2	5 6	4 "	× 2 "	× 1 " 4 "		2	17 6
6 "	× 1 "	8 "	× 1 "	2	16 0	6 "	× 2 "	× 1 " 4 "		3	8 0
9 "	× 1 "	8 "	× 1 "	3	16 0	9 "	× 2 "	× 1 " 4 "		4	19 0
12 "	× 1 "	8 "	× 1 "	4	13 6	12 "	× 2 "	× 1 " 4 "		6	2 0

Fig. 20 represents a No. 3 WATER TROUGH. The water supply apparatus is self-acting, and consists of float ball and cock, enclosed by sluice plate and cover placed at the one end, whilst at the opposite end there is an overflow waste pipe and discharge plug.

No. 4 WATER TROUGH. Fig. 148.



Prices, complete, delivered in Glasgow:—

LENGTH.	BREADTH.	DEPTH.				LENGTH.	BREADTH.	DEPTH.			
2 feet	× 2 feet	× 2 feet,		£1	6 0	4 feet	× 2 feet	× 2 feet,		£2	8 0
3 "	× 2 "	× 2 "		1	17 0	6 "	× 2 "	× 2 "		3	0 0

Scale, 1½ inch—1 foot.

PART X.

DESK, BENCH, AND TABLE STANDARDS.

Much improvement has of late years taken place in the seating of schools, halls, churches, saloons, &c., and we refer to the following illustrations as an evidence of the attention this branch of trade has received from us. There can be no question as to the superiority of cast iron over every other material for the standards; cleanliness, substantiality, and economy, along with the little room they occupy, are self-evident recommendations. In order that the various details may be clearly laid down in the plans, we give the sizes of the Iron-Work drawn to a scale, along with several *examples* showing the Standards in connection with the wood-work, see pages 87 and 88.

Schedules, besides specifying the No., should always state the heights, and refer to the *example* for the wood-work, also the No. of ink-well cover.

DESK STANDARDS.

No. 1 Desk Standard.

Fig. 35.

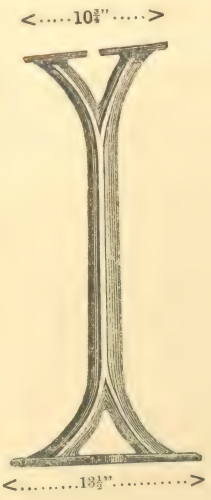
For Wood-work, see page 87, Fig. 171.

26, 27½, and 29 inches high.

2/4 each.

No. 2 Desk Standard.

Fig. 47.

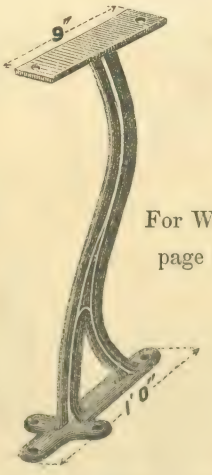


26, 27½, and 29 inches high.

2/4 each.

No. 9 Desk Standard for Book Shelf.

Fig. 58.



For Wood-work, see page 87, Fig. 172.

26, 27½, and 29 inches high.

2/4 each.

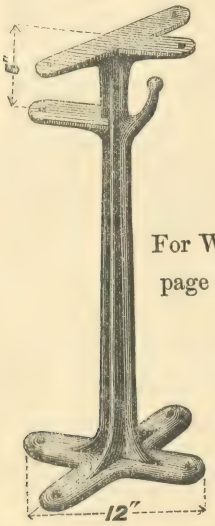
The sizes attached to the cuts refer to the iron work only; but in giving the height the thickness of wood is included.

Scale, 1 inch—1 foot.

DESK STANDARDS.

No. 10 Single Desk Standard, for Book Shelf, and with Hook.

Fig. 59.



For Wood-work, see page 87, Fig. 174.

26, 27½, and 29 inches high.

2/9 each.

No. 5 Folding Desk Standard.

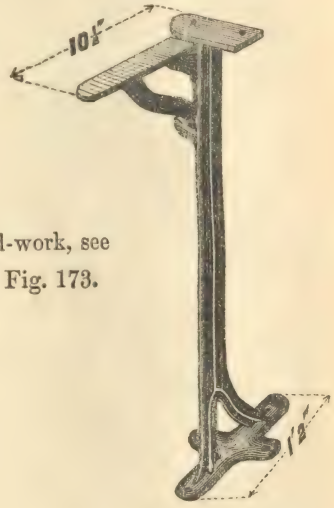
Fig. 49.

26, 27½, and 29 inches high.

3/2 each.

No. 14 Folding Desk Standard.

Fig. 60.



For Wood-work, see page 87, Fig. 173.

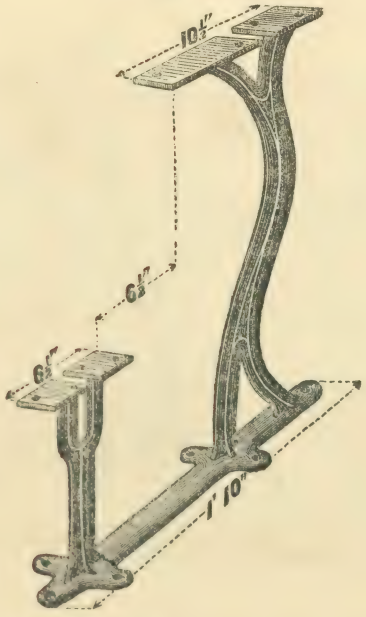
27½, 29, and 31 inches high.

3/4 each.

DESK AND BENCH STANDARDS

No. 3 Desk and Bench Standard.

Fig. 33.



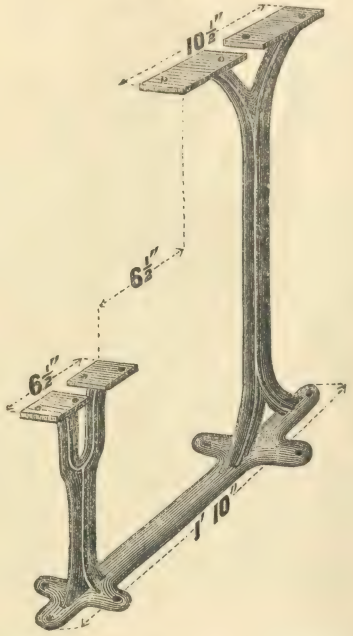
For Wood-work, see page 87, Fig. 171.

26 × 14, 27½ × 15, and 29 × 16 inches high.

3/6 each.

No. 4 Desk and Bench Standard

Fig. 48.



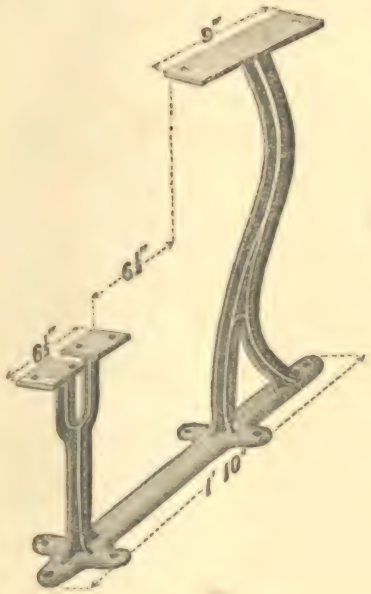
26 × 14, 27½ × 15, and 29 × 16 inches high.

3/6 each.

The size attached to the cuts refer to the iron work only; but in giving the height the thickness of wood is included.

Scale, 1 inch—1 foot.

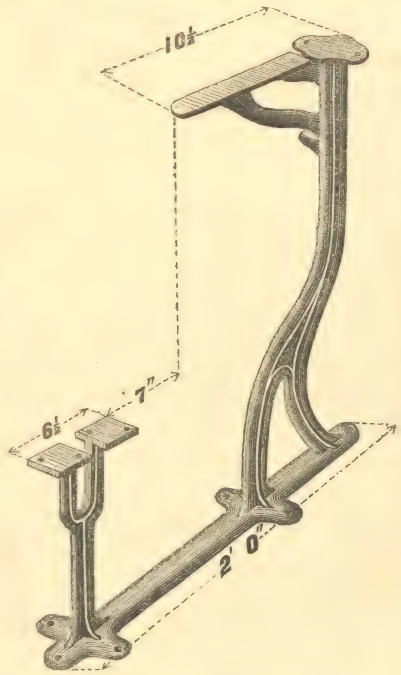
No. 15 Desk and Bench Standard, for Book Shelf.
Fig. 168.



For Wood-work, see page 87, Fig. 172.

20 × 14, 21½ × 15, and 23 × 16 inches high.
3/6 each.

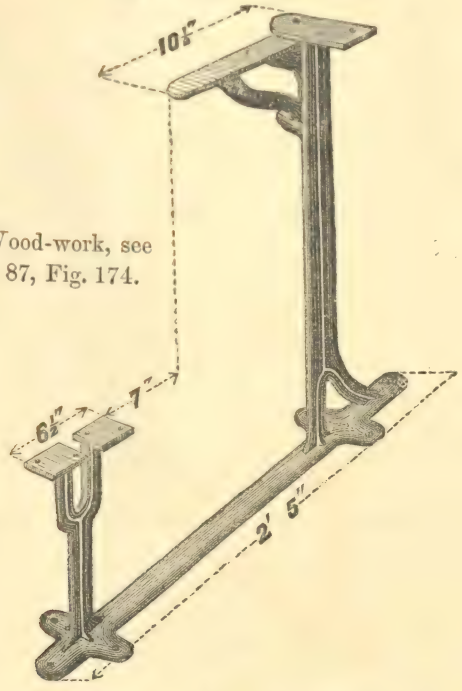
No. 16 Folding Desk and Bench Standard.
Fig. 169.



For Wood-work, see page 87, Fig. 174.

26 × 14, 27½ × 15, and 29 × 16 inches high.
4/6 each.

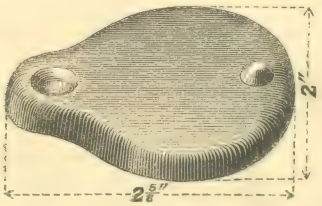
No. 17 Folding Desk and Bench Standard.
Fig. 170.



For Wood-work, see page 87, Fig. 174.

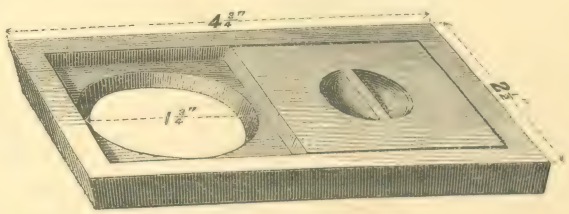
27½ × 15, 29 × 16, and 31 × 17 inches high.
4/8 each.

No. 1 Ink-Well Cover, Fig. 181.



1½d. each.

No. 2 Ink-Well Cover, Fig. 182.



4d. each.

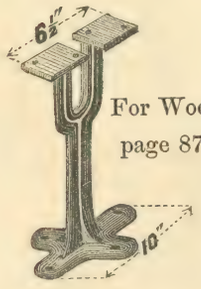
The sizes attached to the cuts refer to the iron-work only; but in giving the height, the thickness of wood is included.

Scale, 1 inch—1 foot.

MACFARLANE'S PATENT.

BENCH STANDARDS.

No. 1 Bench Standard,
Fig. 34.



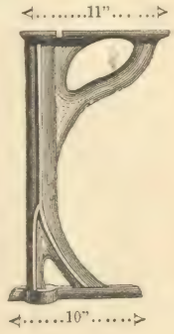
For Wood-work, see page 87, Fig. 171.

12, 13, 14, 15, and 16 inches high, 1/1 each.
17, 18, and 19 inches high 1/3 each.

No. 2 Bench Standard.
Fig. 51.

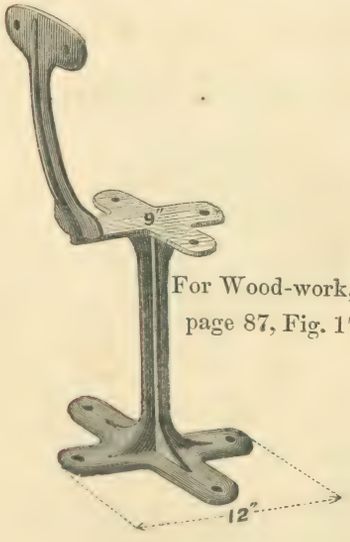
12, 13, 14, 15, and 16 inches high, 1/5 each.
17, 18, and 19 inches high, 1/7 each.

No. 3 Folding Bench Standard.
Fig. 52.



18 inches high.
2/11 each.

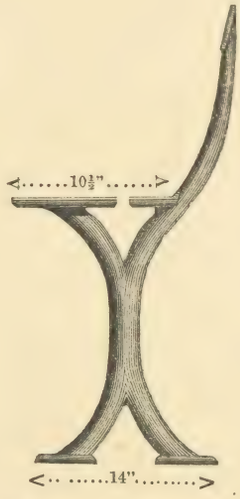
No. 18 Bench and Back Rail Standard.
Fig. 176.



For Wood-work, see page 87, Fig. 173.

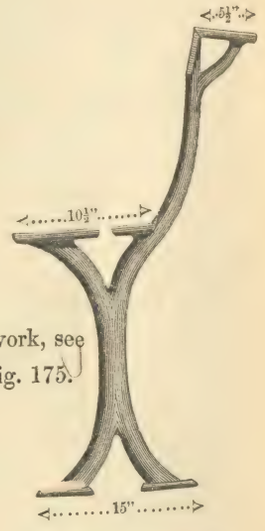
15 and 16 inches high, 2/5 each.
17, 18, and 19 inches high, 2/9 each.

No. 4 Bench and Back Rail Standard.
Fig 53.



15 and 16 inches high, 2/2 each.
17, 18, and 19 inches high, 2/4 each.

No. 5 Bench Standard for Book Board.
Fig. 54.



For Wood-work, see page 88, Fig. 175.

18 × 30 inches high.
2/8 each.

The sizes attached to the cuts refer to the iron-work only; but in giving the height, the thickness of wood is included.

Scale, 1 inch—1 foot.

BENCH STANDARDS.

No. 6 Folding Bench and Back Rail Standard.

Fig. 55.

18 inches high.

3/8 each.

No. 7 Bench Standard for Folding Book Board.

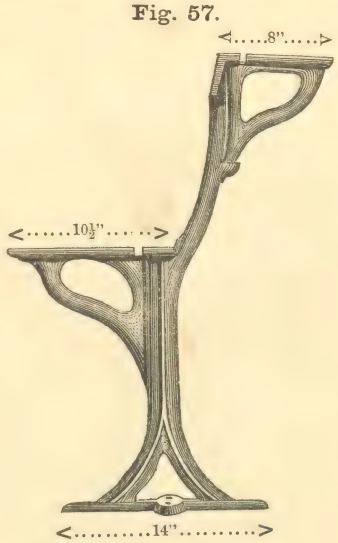
Fig. 56.

18 × 30 inch high.

3/8 each.

No. 8 Folding Bench Standard, for Folding Book Board.

Fig. 57.



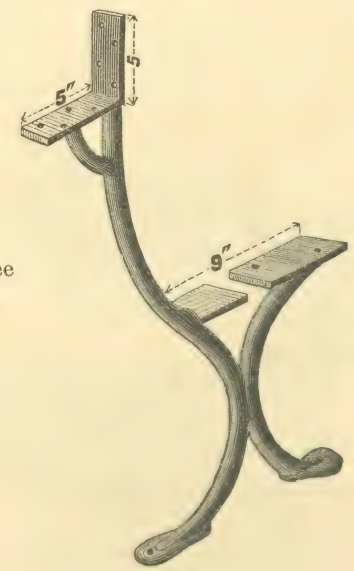
18 × 30 inches high.

4/3 each.

MACFARLANE'S TABLE STANDARDS.

No. 19 Bench and Table Standard.

Fig. 180.



For Wood-work, see page 88, Fig. 183.

18 × 31 inches high.

2/11 each.

No. 6 Table Standard.

Fig. 50.

24, 26, 28, and 30 inches high.

2/6 each.

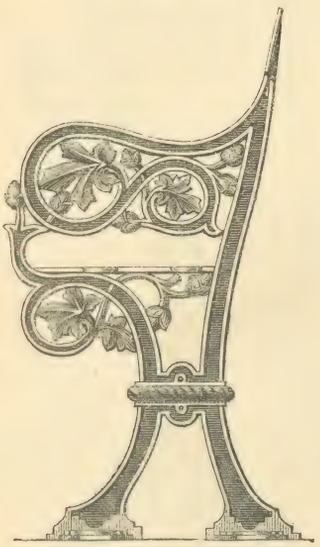
The sizes attached to the cuts refer to the iron-work only; but in giving the height, the thickness of wood is included.

Scale, 1 inch—1 foot.

BENCH STANDARDS, for Parks, Gardens, Esplanades, &c.

No. 11 Bench Standard.

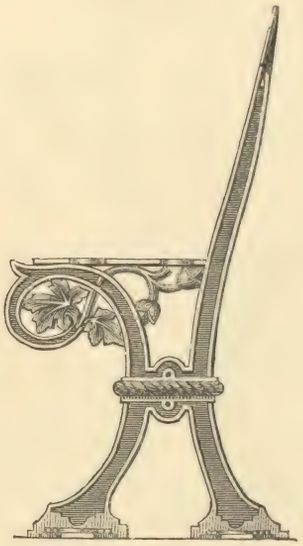
Fig. 177.



19 × 31 inches high.
5/8 each.

No. 12 Bench Standard.

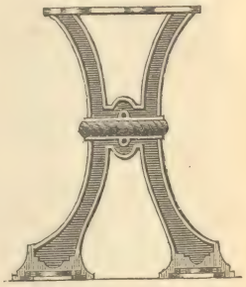
Fig. 178.



19 × 31 inches high.
3/11 each.

No. 13 Bench Standard.

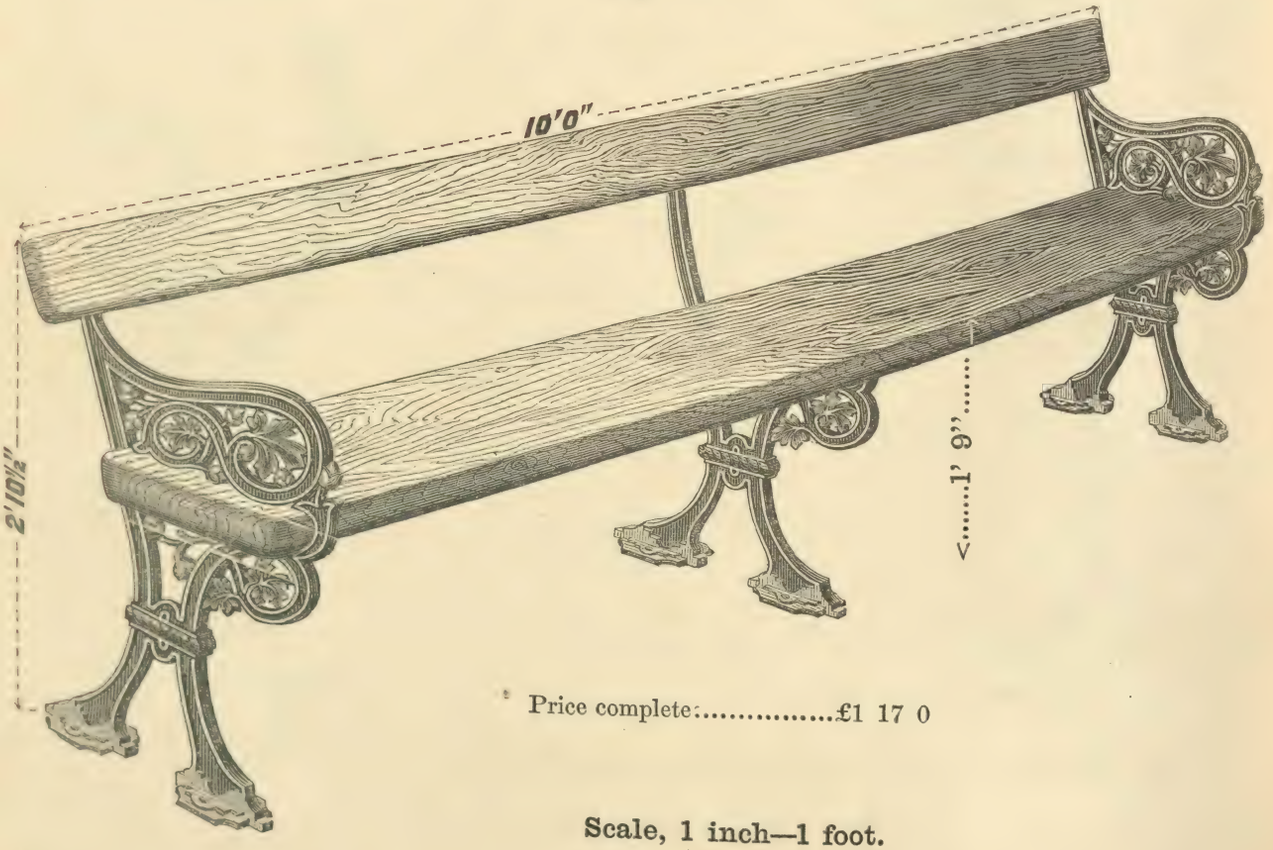
Fig. 179.



19 inches high.
2/9 each.

No. 11 Bench.

Fig. 184.



Price complete:.....£1 17 0

Scale, 1 inch—1 foot.

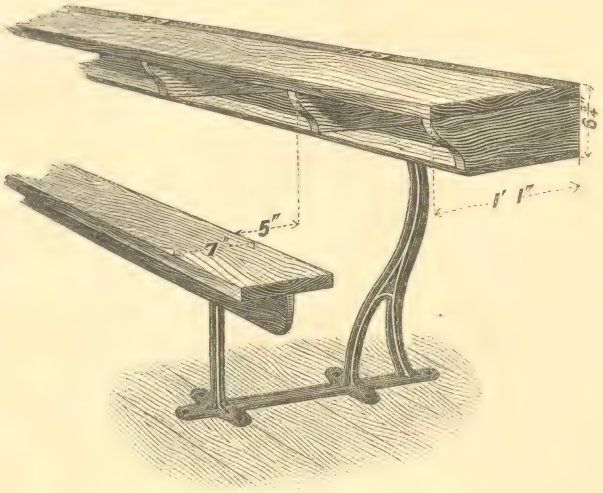
EXAMPLES *showing the Standards in connection with the Wood-Work.*

No. 3 Desk and Bench,
with No. 2 Ink-well Cover.

Fig 171.

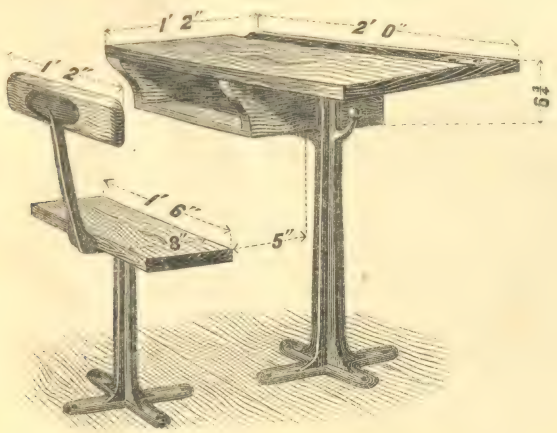
No. 15 Desk and Bench,
with Book Shelf and No. 2 Ink-well Cover.

Fig. 172.



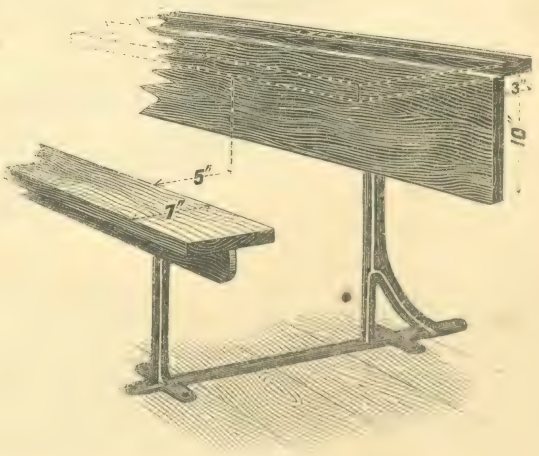
No. 10 Single Desk, with Shelf, Hook,
No. 18 Bench, and No. 2 Ink-well Cover.

Fig. 173.



No. 16 Folding Desk and Bench,
with No. 2 Ink-well Cover.

Fig. 174.

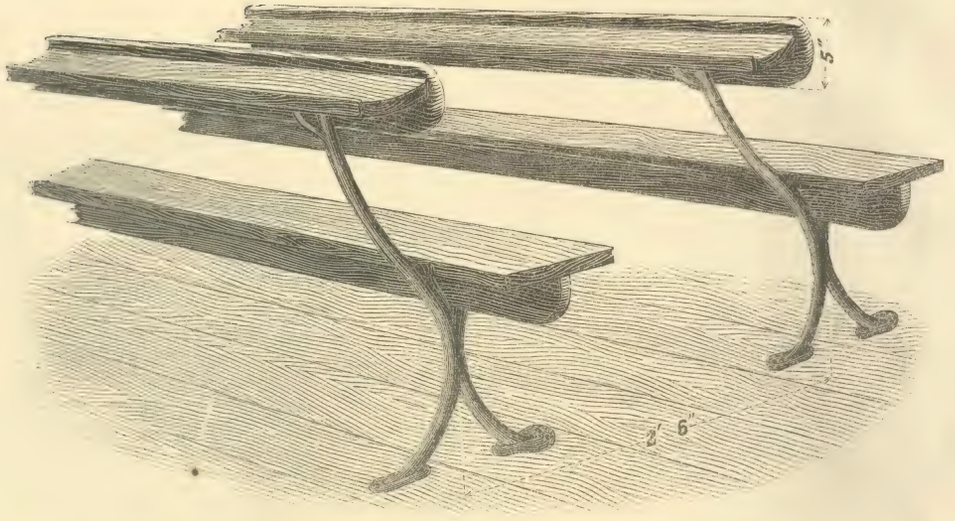


Scale, $\frac{3}{4}$ inch—1 foot.

EXAMPLES *showing the Standards in connection with the Wood-Work.*

No. 5 Bench and Book Board.

Fig. 175.



No. 19 Bench and Table.

Fig. 183.

Scale, $\frac{3}{4}$ inch—1 foot.

PRICE LIST OF

MACFARLANE'S CAST IRON MANUFACTURES.

SEE ILLUSTRATED CATALOGUE, VOLS. I. AND II.

GOODS OIL PAINTED, AND DELIVERED FREE AT VESSEL OR RAILWAY IN LONDON.

VOLUME FIRST.

PART I.—PIPES.

MACFARLANE'S PATENT

No. 1 Round RAIN WATER, STOVE, or SOIL PIPES and Connections.

	2, 10½d.	2½, 1/1½	3, 1/4	3½, 1/8	4, 2/	4½, 2/5	5, 2/10	6, 3/7	7, 5/	8, 6/2	ins. p.yd	See Drawings, Vol. I. Page.
Pipes, plain, and with No. 1 Ears,												7
No. 1 Heads,	1/2	1/3	1/7	1/9	2/	2/2	2/7	3/2	..	..	each	13
Elbows,	1/2	1/3	1/7	1/10	2/2	2/7	3/2	3/6	5/3	6/9	each	13
Do. with Door,	..	..	2/5	2/9	3/2	3/6	4/3	5/1	6/9	8/2	each	13
3-inch Offsets,	1/	1/1½	1/4	1/7	1/10	2/1	2/4	2/11	4/8	6/2	each	13
6-inch Offsets,	1/6	1/9	2/1	2/4	2/9	3/2	3/6	4/1	5/10	7/2	each	13
9-inch Offsets,	2/	2/3	2/7	2/11	3/5	3/8	4/1	5/	7/	8/6	each	13
12-inch Offsets,	2/4	2/8	2/11	3/4	3/10	4/5	5/	5/10	8/2	9/4	each	13
Single Branch,	1/5	1/7	1/9	2/1	2/4	2/9	3/3	4/1	5/3	6/9	each	13
Double Branch,	1/10	2/3	2/9	3/3	3/10	4/3	4/10	5/6	6/9	8/2	each	13
Syphon Trap,	2/4	2/8	2/11	3/6	4/1	5/	5/10	6/9	8/9	10/6	each	13
Do. with Door,	3/2	3/6	3/10	4/5	5/1	5/11	7/	8/	10/3	12/	each	13
Shoes,	9½d	10½d	1/	1/2	1/6	1/9	2/3	2/11	4/1	5/3	each	13
18-inch Boot,	1/2	1/5	1/7	2/	2/4	2/11	3/6	4/1	5/3	6/5	each	13
Union Sockets,	7d	8d	10½d	1/	1/1	1/2	1/3½	1/6	2/	2/4	each	13
Branch, cast on,	7d	8d	9½d	1/	1/3½	1/7	2/	2/4	3/	3/6	each	13
Holdfasts,	2/	2/	2/6	2/6	3/	3/	4/6	6/	7/6	9/6	doz.	13
Spikes,										10½d	doz.	13

MACFARLANE'S PATENT.

No. 2 Square PIPES and Connections.

	3×2½ 2/7	3×3 2/11	4×3 3/4/5	4×4 4/	5×3½ 4/8	5×5 5/8	6×4 6/	6×6 7/9	ins. p.yd	Page. 8
Pipes, plain, and with No. 1 Ear,										
Elbows,	2/5	2/9	3/5	4/	4/7	5/5	5/10	7/1	each	15
3-inch Offsets,	2/1	2/4	2/9	3/4	4/1	4/8	5/3	6/5	each	14
6-inch Offsets,	2/7	2/10	3/10	4/2	4/10	5/9	5/11	7/4	each	14
9-inch Offsets,	3/5	3/8	4/6	5/1	5/9	6/10	6/10	8/9	each	14
12-inch Offsets,	3/10	4/3	5/5	6/2	6/11	8/2	8/2	10/3	each	14
Single Branch,	2/8	2/9	3/6	4/	4/10	5/6	5/10	7/4	each	15
Double Branch,	3/6	3/10	4/10	5/6	6/6	7/7	7/9	9/4	each	15
Shoes,	1/8	1/10	2/2	2/8	3/	3/6	4/	4/10	each	15
Union Sockets,	8d	9d	1/	1/3	1/6	1/9	2/	2/5	each	15
Branches, cast on,	1/1	1/2	1/2	1/5	1/9	2/3	2/4	2/8	each	15

Entered at Stationers' Hall.

No. 2 Square PIPES—Continued.

We also make *to order* the following extra sizes of No. 2 Pipes and Connections:—

	2½×2 2/4	2½×2½ 2/5	3×2 2/5	4×2 3/	4×2½ 3/3	5×3 4/7	ins. p.yd	See Drawings, Vol. I. Page. 8
Pipes,								
Elbows,	2/3	2/4	2/4	3/2	3/4	4/6	each	15
3-in. Offsets	1/9	2/	2/	2/4	2/7	3/6	each	14
6-in. Offsets	2/3	2/4	2/4	2/11	3/4	4/5	each	14
9-in. Offsets	2/11	3/2	3/2	3/10	4/	5/2	each	14
12-in. Offsets	3/4	3/6	3/6	4/3	5/	6/4	each	14
Sin. Branch,	2/2	2/3	2/4	2/10	3/2	4/2	each	15
Double do.	2/5	3/2	3/3	3/11	4/3	5/10	each	15
Shoes,	1/6	1/7	1/7	1/10	2/	2/8	each	15
Union Sock's	7d	7½d	7½d	10½d	1/	1/3	each	15
Bran. cast on	1/	1/1	1/1	1/2	1/2	1/9	each	15

MACFARLANE'S PATENT.

No. 3 Semicircular PIPES and Connections.

	3×2½ 2/8	4×3 3/4	5×3½ 4/2	6×4 5/3	ins. p.yd	Page. 9
Pipes,						
Elbows, Obtuse,	2/9	4/	5/1	5/10	each	9
3-inch Offsets,	2/2	2/7	4/	5/	each	9
6-inch Offsets,	2/7	4/	4/10	5/11	each	9
9-inch Offsets,	3/3	4/8	5/8	7/	each	9
12-inch Offsets,	3/11	5/5	7/	8/2	each	9
Single Branch,	2/8	3/6	4/10	5/10	each	9
Double Branch,	3/7	4/9	6/8	7/10	each	9
Shoes,	1/9	2/3	3/	3/11	each	9
Union Sockets,	9½d	1/1	1/5	1/8	each	9
Branch, cast on,	1/1	1/7	2/	2/4	each	9

MACFARLANE'S PATENT.

Ornamental PIPES.

	4×3 4/	5×3½ 5/6	6×4 7/	ins. p.yd	Page. 10
No. 4,					
No. 5,	4/8	6/	7/9	p.yd	12
No. 6,	5/3	6/9	8/6	p yd	10
No. 7,	4/	5/4	7/	p.yd	10

MACFARLANE'S PATENT.

Ornamental PIPE HEADS.

See Drawings, Vol. I

	2	2½	3	3½	4	4½	5	6	in.	Page.
No. 2,	8/2	8/9	9/4	10/6	11/	12/6	13/9	15/	each	16
No. 3,	7/6	7/10	8/6	9/8	10/6	11/8	12/6	14/	each	16
No. 4,	8/2	8/9	9/4	10/6	11/	12/6	13/9	15/	each	16
No. 5,	7/	7/3	7/10	9/	10/	11/4	12/6	14/	each	16
No. 6,	5/10	6/5	7/	8/2	8/9	9/8	10/3	11/8	each	17
No. 7,	9/	9/8	10/3	11/	12/	13/2	14/4	15/9	each	17
No. 8,	6/10	7/2	7/9	9/2	10/3	11/8	12/10	14/4	each	17
No. 9,	16/6	17/6	19/	21/	23/6	26/	29/	33/6	each	17
No. 10,	8/2	8/6	8/9	10/	10/6	11/8	12/6	14/	each	18
No. 11,	9/8	10/	10/6	11/8	12/6	14/	15/	17/	each	18
No. 12,	8/2	8/9	9/4	10/6	11/	12/6	13/9	15/	each	18
No. 13,	8/2	8/9	9/4	10/6	11/	12/6	13/9	15/	each	18
No. 14,	8/2	8/9	9/4	10/6	11/	12/6	13/9	15/	each	19
No. 15,	3/6	4/	4/8	5/3	5/6	6/2	6/5	7/2	each	20½
No. 16,	4/	4/6	5/	5/5	5/10	6/9	7/6	8/9	each	19
No. 17,	8/2	8/6	9/4	10/	11/	12/6	13/9	15/	each	19
No. 18,	8/9	9/4	10/	11/	11/8	12/10	14/	15/9	each	19
No. 19,	31/	33/	34/6	37/6	40/	43/	46/6	51/	each	20
No. 20,	22/6	23/6	24/6	27/	28/	33/	36/	39/	each	20
No. 21,	25/6	26/6	29/6	31/6	34/	36/	39/	42/	each	20
No. 22,	10/6	11/	11/8	12/6	13/9	15/	16/6	18/6	each	20
No. 23,	9/4	10/	10/6	11/8	12/3	13/9	14/9	16/6	each	20½
No. 24,	10/6	11/	11/8	13/2	14/4	15/9	17/	19/	each	20½
No. 25,	9/4	10/	10/6	11/8	12/3	13/9	14/9	16/6	each	20½

MACFARLANE'S PATENT.

Ornamental PIPE EARS.

	2,	2½,	3,	3½,	4	4½,	5,	6	in.	Page.
No. 2,	8d	10d	1/	1/1½	1/3	1/6	1/8	2/	each	21
No. 3,	8d	10d	1/	1/1½	1/3	1/6	1/8	2/	each	21
No. 4,	9½d	10½d	1/	1/1½	1/3	1/6	1/8	2/	each	21
No. 5,	9½d	10½d	1/	1/1½	1/3	1/6	1/8	2/	each	21
No. 6,	9½d	10½d	1/	1/1½	1/3	1/6	1/8	2/	each	21
No. 7,	10½d	1/	1/1	1/3	1/6	1/8	2/	2/4	each	21
No. 8,	9½d	10½d	1/	1/1½	1/3	1/6	1/8	2/	each	22
No. 9,	1/1	1/1½	1/2	1/3	1/6	1/9	2/3	2/8	each	22
No. 10,	10½d	1/	1/1	1/3	1/6	1/8	2/	2/4	each	22
No. 11,	9½d	10½d	1/	1/1½	1/3	1/6	1/8	2/	each	22
No. 12,	1/1	1/2	1/3	1/6	1/8	2/	2/4	2/8	each	22
No. 13,	10½d	1/	1/1	1/3	1/6	1/8	2/	2/4	each	22
No. 14,	9½d	10½d	1/	1/1½	1/3	1/6	1/8	2/	each	22
No. 15,	10½d	1/	1/1	1/3	1/6	1/8	2/	2/4	each	23
No. 16,	1/1	1/1½	1/2	1/5	1/7	1/9	2/2	2/8	each	23
No. 19,	1/1	1/1½	1/2	1/5	1/7	1/9	2/2	2/8	each	23
No. 20,	1/1	1/1½	1/2	1/5	1/7	1/9	2/2	2/8	each	23
No. 21,	1/1	1/1½	1/2	1/5	1/7	1/9	2/2	2/8	each	23
No. 22,	10½d	1/	1/1	1/3	1/6	1/9	2/2	2/8	each	23

MACFARLANE'S PATENT.

Ornamental PIPE Connections.

See Drawings, Vol. I.

	3,	3½,	4,	4½	5,	6	in.	Page.
No. 4 Elbows,	7/4	8/2	9/	10/	10/6	12/3	each	24
No. 5 Elbows,	7/4	8/2	9/	10/	10/6	12/3	each	24
No. 4 3-inch Offsets,	7/4	8/2	9/	10/	10/6	12/3	each	24
No. 4 6-inch Offsets,	8/9	9/4	10/	11/8	12/6	14/	each	25
No. 4 9-inch Offsets,	10/	10/6	11/8	12/10	13/6	15/	each	24
No. 4 12-inch Offsets,	11/4	12/	12/6	14/	14/9	16/6	each	24
No. 5 3-inch Offsets,	7/4	8/2	9/	10/	10/6	12/3	each	24
No. 5 6-inch Offsets,	8/9	9/4	10/	11/8	12/6	14/	each	24
No. 5 9-inch Offsets,	10/	10/6	11/8	12/10	13/6	15/	each	24
No. 5 12-inch Offsets,	11/4	12/	12/6	14/	14/9	16/6	each	24
No. 4 Back Branch Piece,	8/6	9/	10/2	11/	12/6	14/	each	24
No. 4 Single Branch Piece,	8/6	9/	10/2	11/	12/6	14/	each	24
No. 4 Double Branch Piece,	9/8	10/3	11/4	12/6	14/4	16/6	each	24
No. 5 Back Branch Piece,	8/6	9/	10/2	11/	12/6	14/	each	24
No. 5 Single Branch Piece,	8/6	9/	10/2	11/	12/6	14/	each	24
No. 5 Double Branch Piece,	9/8	10/3	11/4	12/6	14/4	16/6	each	24
No. 4 Pedestal,	7/7	8/6	9/8	10/6	11/8	14/	each	24

PART II.—GUTTERS.

MACFARLANE'S PATENT.

H. R. GUTTERS, and Connections.

	3,	3½,	4,	4½,	5,	6,	7,	8,	9,	10	in.	Page.
No. 1 Gutter,	7¼d	7¾d	8½d	10½d	1/	1/6	2/7	2/10	3/8	4/8	p.yd	29
No. 2 Gutter,	7¾d	8¾d	9d	11¼d	1/3½	1/9	..	2/11	..	..	p.yd	30
Angles,	10½d	1/	1/2	1/6	1/9	2/1	3/3	3/6	4/5	5/10	each	31
Nozzle Pieces,	9½d	10½d	1/1	1/5	1/7	1/9	2/11	3/3	4/1	5/3	each	31
T Pieces,	10½d	1/	1/2	1/6	1/9	2/1	3/3	3/6	4/5	5/10	each	31
Union Clips,	3½d	4½d	6d	7d	8d	9½d	1/	1/2	1/6	2/	each	31
Stop Ends, loose,	2¼d	2¾d	3d	3d	3½d	4½d	7d	10½d	1/2	1/7	each	31
Do., Drops cast on,	2¼d	2¾d	3d	3d	3½d	4½d	7d	10½d	1/2	1/7	each	31
No. 1 Brackets,	4½d	5d	6d	7d	8d	9½d	1/2	1/7	2/	2/4	each	31
Hooks,	2¼d	2¾d	3½d	4d	4½d	6d	8d	1/	1/2	1/9	each	31

Bolts and Nuts,	¾ × 3/16 5/3	1 × ⅛ 7/	1¼ × 5/16 10/6	in. gro.	31
No. 7 Gutter,	6 × 3½ in.		2/	p.yd	32
Angle,	6 × 3½ in.		2/	each	31
Nozzle Piece,	6 × 3½ in.		2/	each	31
No. 29 Gutter,	6 × 3 in.		3/8	p.yd	32
Angle,	6 × 3 in.		3/8	each	31

MACFARLANE'S PATENT.

O. G. GUTTERS and Connections.

	4.	4½.	5	6	In.	Page. (See Drawings, Vol. I.)
No. 4 Gutters	1/1	1/2	1/6	2/	p.yd	33
No. 5 Gutters	1/2	1/3½	1/8	2/2	p.yd	33
Angles	1/3½	1/6	1/9	2/4	each	36
Nozzle Pieces	1/4½	1/8	1/9	2/4	each	36
Union Clips	5d	6d	6½d	7d	each	36
No. 6 Gutters	1/2	1/6	1/9	2/4	p.yd	34, 35
Angles	1/3	1/7	1/10	2/7	each	36
Nozzle Pieces	1/6	1/7	1/10	2/7	each	36
Union Clips	7d	7½d	8d	2/d	each	36
Stop Ends, ornamental	4d	5d	5d	7d	each	36
Stop Ends, plain	3d	3½d	4d	6½d	each	36
Do., and Props cast on	7½d	8d	8½d	4d	each	36

Ornamental GUTTERS.

								Page.
No. 8,.. Price,..	.. ..	.. ..	4½ × 3½ 2/7	6 × 4½ 4/2	8 × 6 6/5	10 × 6 7/7	inches. per yard.	39, 41
No. 10,.. Price,..	.. ..	.. ..	4½ × 3½ 2/2	6 × 4½ 3/10	8 × 6 5/10	10 × 6 7/	inches. per yard.	42, 43
No. 11,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	5 × 4½ 3/8	inches. per yard.	44
No. 12,.. Price,..	.. ..	4½ × 4½ 2/8	5 × 3½ 2/4	5 × 5 3/5	6 × 4 3/6	8 × 5 5/5	inches. per yard.	44
No. 13,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	5½ × 5 4/1	inches. per yard.	45
No. 14,.. Price,..	.. ..	.. ..	4 × 3 1/7½	5 × 3 2/	5 × 3½ 2/7	6 × 3 2/3	inches. per yard.	46
No. 15,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	6 × 4 3/3	inches. per yard.	45
No. 16,.. Price,..	.. ..	.. ..	.. ..	4½ × 3½ 2/7	6 × 6 5/	8 × 6 5/8	inches. per yard.	47
No. 23,.. Price,..	4 × 3 2/	4 × 4 2/4	4½ × 4½ 3/	5 × 3½ 2/5	5 × 4 2/7	5 × 5 3/7	inches. per yard.	48, 49
No. 23,.. Price,..	5½ × 4 3/4	6 × 5 4/	7 × 5 5/	7 × 5½ 5/5	8 × 5½ 5/6	10 × 6 6/9	inches. per yard.	50, 51
No. 24,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	5 × 3½ 2/	inches. per yard.	52
No. 26,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	6 × 4 4/8	inches. per yard.	52
No. 30,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	5 × 5 3/4	inches. per yard.	53
No. 33,.. Price,..	.. ..	.. ..	.. ..	4½ × 3 2/4	6 × 4 3/5	8 × 5 5/11	inches. per yard.	54
No. 34,.. Price,..	4 × 3 2/1	5 × 2½ 2/3	5 × 4 3/4	5½ × 4½ 3/7	6 × 4½ 4/2	7 × 5 5/2	inches. per yard.	55, 56
No. 37,.. Price,..	.. ..	.. ..	5 × 4 3/2	6 × 5 4/1	8 × 6 6/3	10 × 6 7/9	inches. per yard.	57, 58
No. 38,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	6 × 4 3/8	inches. per yard.	59
No. 40,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	7 × 4½ 4/7	inches. per yard.	60
No. 42,.. Price,..	.. ..	.. ..	4½ × 3 3/6	6 × 4½ 5/3	8 × 6 7/10	10 × 6 9/8	inches. per yard.	61
No. 44,.. Price,..	.. ..	.. ..	4½ × 3½ 2/8	6 × 4½ 3/11	8 × 6 6/2	10 × 6 7/9	inches. per yard.	62
No. 45,.. Price,..	.. ..	.. ..	.. ..	4½ × 3 2/4	6 × 4 3/10	8 × 5 6/	inches. per yard.	63
No. 46,.. Price,..	.. ..	.. ..	.. ..	4½ × 3 2/4	6 × 3½ 3/8	8 × 4½ 5/8	inches. per yard.	64

Ornamental GUTTERS—Continued.

								See Drawings, Vol. I.
No. 47,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	6 × 4½ 4/2	inches. per yard.	65
No. 48,.. Price,..	.. ..	.. ..	6 × 4½ 4/2	7 × 5 5/5	8 × 6 6/4	10 × 6 7/9	inches. per yard.	66, 67
No. 49,.. Price,..	.. ..	.. ..	.. ..	4½ × 3½ 2/5	6 × 4½ 4/2	8 × 6 6/5	inches. per yard	68, 69
No. 50,.. Price,..	.. ..	.. ..	.. ..	.. ..	6 × 4 4/2	9 × 4½ 6/2	inches. per yard.	69½
No. 51,.. Price,..	.. ..	.. ..	5 × 4 3/3	6 × 5 4/10	8 × 6 6/9	10 × 6 7/10	inches. per yard	70 70½
No. 52,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	6 × 5 4/5	inches. per yard.	71
No. 53,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	5½ × 5 5/8	inches. per yard.	71¼
No 54,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	9 × 8 9/	inches. per yard.	71½
No. 55,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	7 × 5 5/6	inches. per yard.	71¾
No. 56,.. Price,..	.. ..	.. ..	.. ..	6 × 4½ 6/	8 × 6 7/7	10 × 6 9/8	inches. per yard.	72
No. 57,.. Price,..	.. ..	.. ..	.. ..	6 × 5 4/5	8 × 7 6/8	10 × 7 8/	inches. per yard.	72½

MACFARLANE'S PATENT.

CIRCULAR GUTTERS—For Circular buildings of any diameter.

								Page.
No. 2,.. Price,..	.. ..	.. ..	.. ..	4 2/1	4½ 2/3	5 3/	inches. per yard.	73
No. 5,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	5 × 2¾ 3/8	inches. per yard.	74
No. 14,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	6 × 3 4/10	inches. per yard.	74
No. 10,.. Price,..	.. ..	.. ..	.. ..	.. ..	4½ × 3½ 4/6	6 × 4½ 7/3	inches. per yard.	75

MACFARLANE'S PATENT.

Boundary WALL GUTTERS.

								Page.
No. 18,. Price,..	.. ..	.. ..	.. ..	.. ..	8 × 5 3/6	9 × 6 6/	inches. per yard.	76, 77
No. 25,.. Price,..	.. ..	4 × 3 2/	5 × 3 2/7	5 × 4 2/11	5 × 5 3/8	5 × 6½ 4/6	inches. per yard.	78, 79
No. 28,.. Price,..	.. ..	.. ..	.. ..	7 × 3 3/2	10 × 4 4/8	13 × 5 6/5	inches. per yard.	80, 81

MACFARLANE'S PATENT.
Ornamental GUTTER ANGLES.

								See Drawings, Vol. I. Page.
No. 8,.. Price,..	.. ..	.. ..	4½ × 3½ 2/7	6 × 4½ 4/4	8 × 6 6/8	10 × 6 7/9	inches. each.	82
No. 10,.. Price,..	.. ..	.. ..	4½ × 3½ 2/4	6 × 4½ 4/	8 × 6 6/	10 × 6 7/3	inches. each.	82
No. 11,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	5 × 4½ 3/8	inches. each.	82
No. 12,.. Price,..	.. ..	4¾ × 4½ 2/10	5 × 3½ 2/6	5 × 5 3/6	6 × 4 3/8	8 × 5 5/6	inches. each.	82
No. 13,.. Price,..	. ..	.. ..	.. ..	.. ..	.. ..	5½ × 5 4/3	inches. each.	82
No. 14,.. Price,..	.. ..	.. ..	4 × 3 1/9	5 × 3 2/1	5 × 3½ 2/9	6 × 3 2/4	inches. each	82
No. 15,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	6 × 4 3/3	inches. each.	82
No. 16,. Price,..	. ..	.. ..	.. ..	4½ × 3½ 2/9	6 × 6 5/3	8 × 6 5/10	inches. each.	82
No. 23,.. Price,..	4 × 3 2/1	4 × 4 2/6	4¾ × 4¾ 3/2	5 × 3½ 2/6	5 × 4 2/9	5 × 5 3/9	inches. each.	82
No. 23,.. Price,..	5½ × 4 3/6	6 × 5 4/3	7 × 5 5/3	7 × 5½ 5/7	8 × 5½ 5/9	10 × 6 7/	inches. each.	82
No. 24,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	5× 3½ 2/1	inches. each.	82
No. 26,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	6 × 4 4/10	inches. each.	82
No. 30,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	5 × 5 3/6	inches. each.	82
No. 33,.. Price,..	.. ..	.. ..	.. ..	4½ × 3 2/6	6 × 4 3/6	8 × 5 6/1	inches. each.	82
No. 34,.. Price,..	4 × 3 2/2	5 × 2½ 2/4	5 × 4 3/6	5½ × 4½ 3/9	6 × 4½ 4/4	7 × 5½ 5/4	inches. each.	82
No. 37,.. Price,..	.. ..	.. ..	5 × 4 3/4	6 × 5 4/3	8 × 6 6/6	10 × 6 8/	inches. each.	82
No. 38,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	6 × 4 3/10	inches. each.	82
No. 40,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	7 × 4½ 4 9	inches. each.	82
No. 42,.. Price,..	.. ..	.. ..	4½ × 3 3/8	6 × 4½ 5/5	8 × 6 8/	10 × 6 9/10	inches. each.	82
No. 44,.. Price,..	.. ..	.. ..	4½ × 3½ 2/9	6 × 4½ 4/	8 × 6 6/4	10 × 6 8/	inches. each.	82
No. 45,.. Price,..	.. ..	.. ..	.. ..	4½ × 3 2 5	6 × 4 4/	8 × 5 6/3	inches. each.	82
No. 46,.. Price,..	.. ..	.. ..	.. ..	4½ × 3 2/4	6 × 3½ 3/10	8 × 4½ 5/10	inches. each.	82
No. 47,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	6 × 4½ 4/2	inches. each.	82
No. 48,.. Price,..	.. ..	.. ..	6 × 4½ 4/4	7 × 5 5/6	8 × 6 6/6	10 × 6 7/10	inches. each.	82
No. 49,.. Price,..	.. ..	.. ..	.. ..	4½ × 3½ 2/6	6 × 4½ 4/4	8 × 6 6/8	inches. each.	82
No. 50,.. Price,..	.. ..	.. ..	.. ..	.. ..	6 × 4 4/4	9 × 4½ 6/2	inches. each.	82
No. 51,.. Price,..	.. ..	.. ..	5 × 4 3/5	6 × 5 5/	8 × 6 7/	10 × 6 8/	inches. each.	82
No. 52,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	6 × 5 4/6	inches. each.	82
No. 53,. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	5½ × 5 5/10	inches. each.	82
No. 54,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	9 × 8 9/	inches. each.	82
No. 55,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	7 × 5 5/9	inches. each.	82
No. 56,.. Price,..	.. ..	.. ..	.. ..	6 × 4½ 6/2	8 × 6 7/9	10 × 6 9/10	inches. each.	82
No. 57,.. Price,..	.. ..	.. ..	.. ..	6 × 5 4/8	8 × 7 6/9	10 × 7 8/2	inches. each.	82

MACFARLANE'S PATENT.
Boundary WALL GUTTER ANGLES.

								See Drawings, Vol. I. Page.
No. 18,.. Price,..	.. ..	.. ..	.. ..	.. ..	8 × 5 3/8	9 × 6 6/2	inches. each.	82
No. 25,.. Price,..	.. ..	4 × 3 2/1	5 × 3 2/8	5 × 4 3/	5 × 5 3/10	5 × 6½ 4/8	inches. each.	82
No. 28,.. Price,..	.. ..	.. ..	.. ..	7 × 3 3/4	10 × 4 4/10	13 × 5 6/8	inches. each.	82

MACFARLANE'S PATENT.
Ornamental GUTTER Connections.

	4,	4½,	5,	5½,	6,	7,	8,	10,	in.	Page.
Ornamental Stop Ends,...	7d	8d	10½d	1/1	1/5	1/8	2/	2/4	each	82
Plain Stop Ends,.....	4½d	7d	9½d	11d	1/2	1/6	1/9	2/1	each	82
Stop Ends cast on.....	3½d	4d	6d	8d	9½d	1/	1/5	1/9	each	82
Drops cast on bottom,....	3½d	4d	6d	8d	9½d	1/	1/5	1/9	each	82
Do. back or corner,.....	9½d	10½d	1/	1/1	1/2	1/8	2/3	2/11	each	83
Union Clips,.....	4½d	7d	8d	9½d	1/	1/2	1/7	2/	each	82
Gratings for disch. drop,...	2, 7d	2½, 8d	3, 9½d	3½, 10½d	4, 1/	4½, 1/2	5, 1/5	6, 1/9	in. each	83
No. 1 Lion's Head, ...	.. ..	.. ..	.. ..	.. ..	.. ..	4, 7d	5, 9d	6, 1/	in. each	84
No. 2 Panther's Head,.....	..	..	..	..	..	8d	10½d	1/1	each	85
No. 3 Man's Head,.....	..	..	.	..	..	1/	1/2	1/5	each	86
No. 4 Gargoyle Head, ...	..	..	..	..	..	1/2	1/5	1/9	each	87

Snow Grate	6, 2/8	7, 2/10	8, 3/3	9, 3/8	10, 4/1	11, 4/6	12, 5/1	13, 5/9	14, 6/3	15, 7/	16, 7/4	in. p.yd	84

No. 3 Bracket,.....	3, 10½d	4, 1/	5, 1/1	6, 1/2	7, ..	8, ..	in. each	88
No. 4 Bracket,.....	1/	1/1	1/2	1/5	1/9	2/1	each	88
No. 5 Bracket, 9".....	1/2	1/3	1/5	1/8	1/10	2/1	each	89, 90
No. 5 Bracket, 12".....	1/7	1/9	2/	2/2	2/4	2/8	each	89, 90
No. 5 Bracket, 15".....	2/	2/1	2/3	2/7	2/9	2/11	each	89, 90
No. 5 Bracket, 18".....	2/7	2/9	2/11	3/2	3/6	3/10	each	89, 90
No. 6 Bracket, 9".....	1/2	1/3	1/5	1/8	1/10	2/1	each	89, 90
No. 6 Bracket, 12".....	1/7	1/9	2/	2/2	2/4	2/8	each	89, 90
No. 6 Bracket. 15".....	2/	2/1	2/3	2/7	2/9	2/11	each	89, 90
No. 6 Bracket, 18".....	2/7	2/9	2/11	3/2	3/6	3/10	each	89, 90
Spikes for Brackets, ...						10½d	doz.	13

MACFARLANE'S PATENT.
CENTRE GUTTERS.

								Page.
No. 19,.. Price,..	.. ..	.. ..	.. ..	7½ × 3½ 3/5	10 × 4½ 4/6	13 × 5½ 5/11	inches. per yard.	93
No. 20,.. Price,..	.. ..	. ..	.. ..	.. ..	.. ..	15 × 9 8/5	inches. per yard.	95
No. 21,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	16 × 8½ ..	inches. to order.	96
No. 27... Price,..	.. . ..	.. ..	.. ..	.. ..	5 × 3 2/5	6 × 3½ 4/	inches. per yard	97
No. 31,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	9 × 6 9/10	inches. per yard.	98
No. 32,.. Price,..	.. ..	.. ..	.. ..	.. ..	.. ..	24 × 6 10/	inches. per yard.	99
No. 35,.. Price,..	.. ..	.. ..	11½ × 3½ 3/10	15 × 5 6/2	19 × 5 7/7	24 × 6 9/10	inches. per yard.	100
No. 36,.. Price,..	.. ..	.. ..	7 × 3½ 2/4	10 × 4½ 3/6	12 × 5 5/	15 × 6½ 6/11	inches. per yard.	94
No. 39... Price,..	.. ..	.. ..	.. ..	.. ..	19 × 6 9/	24 × 6 11/	inches. per yard	101

PART III.—CRESTING, &c.

MACFARLANE'S PATENT.

RIDGE PLATES and Connections.

Nos.	1	20	20	21	22	23	24	25	26	27		See Drawings, Vol. I. — Page.
Sizes,	5 5 × 5	6 6 × 6	6 6 × 6	8 8 × 8	8 8 × 8	9 9 × 9	9 9 × 9	9 9 × 9	16 × 16	13½ × 13½	ins	
Ridge Plates, ...	2/8	3/2	4/3	5/6	5/6	5/10	7/	7/	11/6	10/9	p.yd	105-110
Do. for Cresting	3/2	3/10	5/2	6/6	6/6	7/2	8/6	8/6	13/2	12/6	p.yd	111
Angles, ...	2/8	3/2	4/3	5/6	5/6	5/10	7/	7/	11/8	11/	each	111
T Pieces, ...	2/8	3/2	4/3	5/6	5/6	5/10	7/	7/	12/	11/	each	111
Crosses, ...	2/8	3/2	4/3	5/7	5/7	6/	7/2	7/2	1 21 0	11/8	each	111
Pavil'n Apexes	2/8	3/4	4/3	5/7	5/7	6/	7/2	7/2	13/	11/8	each	111
Ends, ...	8d	9½d	11d	1/5	1/5	2/	2/	2/	4/10	3/4	each	111
									Nos.			
Turret Cap, ...									26, 10/6	27 8/6	each	111

Our Ornamental Ridge Plates, &c., when made to particular lengths, *charged extra.*

MACFARLANE'S PATENT.

Ornamental CRESTING, &c.

No.	2	3	4	5	6	7		Page.
Height,...	8½"	1'6½"	10½"	1' 2"	1' 2"	9½"		
Price, ...	3/2	4/2	3/4	4/2	4/2	3/4	p.yd	114-115
No.	9	10	11	12	13	14		
Height,...	10"	2' 8"	1' 11"	2' 4"	1' 1"	1' 3"		
Price, ...	3/4	4/8	7/3	7/10	4/2	4/6	p.yd	116-117
No.	15	16	17	18	19	19		
Height,...	8½"	11"	1'	1' 3"	1' 4"	1' 8"		
Price, ...	3/4	3/4	3/6	5/	4/5	7/	p.yd	118-119
No.	31	32	33	34	35	35		
Height,...	1' 2"	1'	1' 3"	1' 1½"	11"	1' 1"		
Price, ...	4/5	4/5	7/	4/6	3/6	4/5	p.yd	119-121
No	35	36	36	36	37	38		
Height,...	2' 2"	10"	1' 4"	1' 10"	1' 7"	2' 2"		
Price, ...	8/9	5/	7/2	10/3	5/6	16/	p.yd	121-123
No.	39	40	41	42	43	44		
Height,...	4' 1"	2' 6"	3'	4' 1"	3' 8"	2' 2"		
Price, ...	20/	10/10	24/6	20/	17/3	17/3	p.yd	124-127½
No.					45	46		
Height...	..	..	..	..	2' 10"	..		
Price, ...		..			24/6	18/	p.yd	128-128½

Flat Crest Socket, ...	2/11	each	128¼
Eave Crest Socket Strap, ...	2/2	each	128¼
No. 58 Balconet, from 3' 0" to 4' 6", ...	36/	each	128½
No. 59 " " "	43/	each	128½
No. 60 " " "	48/	each	128¾
No. 61 " " "	55/6	each	128¾

No. 68 Balcony Bracket,	1' 0" × 1' 2" 10/	1' 6" × 1' 8" 13/6	1' 10" × 2' 3" 17/3	each	129¼
No. 69 " "	8/2	11/	14/	each	129½
No. 70 " "	9/	12/	15/	each	129¾
No. 71 " " ..... 1' 10" × 1' 8"			29/6	each	129¼

Balcony Sole, ...	1' 0" 5/	1' 6" 6/5	1' 10" 8/2	p.yd	129
Balcony Hand Rail, ...	2 × 1⅛ 3/8	2⅛ × 2 5/3	3⅛ × 2⅛ 7/3	ins. p.yd	129

Our Ornamental Cresting, &c., when made to particular lengths, *charged extra.*

MACFARLANE'S PATENT.

FINIALS.

								See Drawings, Vol. I.
No.	1	2	3,	4	5	6		Page.
Height,..	3' 1"	4' 0"	3' 2"	3' 6"	2' 6"	3' 3'		
Price,....	5/6	8/6	7/	4/8	4/	17/	each	129¾, 131
No.	7	8	9	10	11	11		
Height, ...	3' 0"	3' 2"	2' 2"	4' 5"	3' 6"	4' 0"		
Price, ...	10/10	8/6	8/9	14/6	12/10	17/6	each	131, 133
No.	12	13	14	15	16	17		
Height,..	3' 4"	2' 6"	3' 5"	4' 4"	3' 5"	2' 6"		
Price, ...	11/8	6/2	6/6	33/	12/3	7/3	each	134, 136
No.	18	19	20	21	21	21		
Height, ...	2' 6"	5' 6"	3' 5"	2' 10"	5' 0"	7' 0"		
Price, ...	8/2	25/	11/8	12/3	28/	43/6	each	137, 138
No.	22	22	22	23	23	23		
Height,..	3' 6"	5' 0"	7' 0"	3' 6"	5' 0"	7' 0"		
Price, ...	15/9	23/6	40/6	15/	23/	40/	each	139, 140
No.	24	24	24	25	25	25		
Height,..	3' 6"	5' 0"	7' 0"	3' 6"	5' 0"	7' 0"		
Price, ...	16/6	24/	41/	17/6	26/6	42/	each	141, 142
No.	26	26	26	27	27	28		
Height,..	4' 6"	6' 0"	8' 6"	6' 4"	9' 0"	5' 0"		
Price, ...	20/	33/6	55/6	55/6	100/	36/	each	143, 145
No.	28	29	29	29	30	31		
Height,..	7' 0"	3' 6"	5' 0"	7' 0"	5' 0"	1' 0"		
Price, ...	56/	21/	37/6	52/	23/	4/8	each	145, 146
No.	31	31	31	32	32	33		
Height ..	2' 0"	2' 11"	5' 0"	1' 8"	2' 6"	3' 0"		
Price, ...	12/3	21/	44/	18/6	34/	24/	each	145, 151½
No.		33	33	34	34	34		
Height,..	..	5' 0"	7' 0"	4' 0"	6' 0"	9' 0"		
Price, ...		38/6	61/	26/	41/	72/6	each	151½

Screwed Bolt for fastening to building, *charged extra.*

MACFARLANE'S PATENT CROSSES.

No.	37,	37,	38,	38,		Page
Sizes, ...	2' 1" × 1' 8"	2' 10" × 2' 3"	2' 1" × 1' 8"	2' 9" × 2' 3"	each	
Price, ...	22/6	31/6	16/6	23/6		147
No.	39,	39.	40,	41,		
Sizes, ...	2' 8" × 2' 5"	3' 9" × 3' 2"	2' 4" × 1' 10"	1' 11" × 1' 9"	each	147
Price, ...	20/6	27/3	15/	14/6		
No.	41,	42,	42,	43,		147
Sizes, ...	2' 8" × 2' 5"	2' 5" × 1' 9"	3' 3" × 2' 4"	3' 1" × 1' 8"	each	151½
Price, ...	21/9	24/6	33/6	17/		
No.				43,		
Sizes, ...	..	..	..	4' 0" × 2' 3"	each	151½
Price, ...				24/		

MACFARLANE'S PATENT BANNERETS.

No.	48,	49,	50,	51,	52.		Page.
Price, ...	18/	20/6	20/	16/9	24/	each	148

MACFARLANE'S PATENT WEATHERVANES.

No.	57,	58,	59,	60,	61,		Page.
Size, ...	5' 3"	5' 3"	6' 6"	6' 8"	7' 6"		
Price, ...£	2 8 6	3 7 0	3 16 6	2 17 0	4 18 6	each	149-150
No.	61,	61,	62,	62,	62,		
Size, ...	9' 9"	12' 0"	7' 6"	9' 9"	12" 0'		
Price, ...£	7 9 6	10 0 0	5 8 0	7 17 6	10 16 6	each	150-151

Screwed Bolt for fastening to building, *charged extra.*

MACFARLANE'S

SIGN ALPHABETS and NUMERALS.

	2,	2½,	3,	4,	5½	7,	9,	12,	16,	20,	24,	ins.	Page 152 and
Alphabet,	1½d	2½d	3½d	4½d	7½d	11d	1/5	2/	3/2	4/3	5/10	each	152½
Numerals,	1½d	2½d	3½d	4½d	7½d	11d	1/5	2/	3/2	4/3	5/10	each	153

PART IV.—PLUMBERS' CASTINGS.

MACFARLANE'S PATENT.

No. 1 KITCHEN SINKS.

						See Drawings, Vol. I.
Sizes, ...	15 × 12½ × 8	18 × 13 × 8	21 × 13½ × 8	24 × 14 × 8		Page.
Price, ...	5/10	6/3	6/8	7/3	each	154
Sizes, ...	27 × 14½ × 8	30 × 15 × 8	33 × 15½ × 9	36 × 16 × 9		
Price, ...	8/5	9/8	12/6	14/9	each	154

We also make to order the following extra sizes:—

Sizes, ...	18 × 11 × 8	18 × 13 × 6	18 × 15 × 9	21 × 13 × 6	ins.	
Price, ...	6/9	6/9	9/10	7/7	each	154
Sizes, ...	24 × 14 × 6	24 × 18 × 10	24 × 18 × 13	27 × 14 × 6	ins.	
Price, ...	7/10	11/4	17/	8/	each	154
Sizes, ...	30 × 15 × 6	30 × 18 × 7	36 × 18 × 8	36 × 20 × 9	ins.	
Price, ...	9/9	14/9	18/3	20/6	each	154
Sizes, ...	36 × 20 × 12	36 × 24 × 16	36 × 26 × 9	42 × 20 × 9	ins.	
Price, ...	22/6	33/	30/3	25/9	each	154
Sizes, ...	48 × 20 × 9	48 × 20 × 12	48 × 24 × 16	54 × 20 × 9	ins	
Price, ...	31/9	37/	43/6	35/6	each	154
Sizes, ...	60 × 20 × 9	70 × 20 × 9	72 × 20 × 12	72 × 24 × 16	ins.	
Price, ...	40/6	47/	54/6	61/	each	154
No. 2 (Circular)	..	..	..	27 × 16 × 9	ins.	
Price, ...	..	..	..	14/9	each	154
No. 3 (Corner)	..	14 × 14 × 6	18 × 18 × 7	22 × 22 × 7	ins.	
Price, ...	..	6/9	8/	10/3	each	154
No. 4 (Oval), ...	..	..	..	21 × 18 × 10	ins.	
Price, ...	..	..	..	8/7	each	154
Plugs and Drainers for do. 1¾, 2, 2¼, 2½, 2¾, 3 ins.				3½*d*	each	154

MACFARLANE'S SINK TRAPS.

No. 1 Square, ...	4,	5,	6,	7,	8,	9,	10,	11,	12,	ins.	page.
Price, ...	11*d*	1/	1/3	1/9	2/4	2/11	3/8	4/8	5/1	each	155
No. 2 Round	10½*d*	1/	1/2	1/8	2/3	2/8	3/2	3/11	4/8	each	155

No. 3 (D Trap), ...	8,	12,	ins.	
Price, ...	4/8	7/	each	155
No. 4 (Heavy Pattern), ...	8,	12,	ins.	
Price, ...	3/7	6/2	each	155

MACFARLANE'S PATENT STOP COCK COVERS.

No. 1 Stop Cock Cover, ...		8*d*	each.	155
No. 2 Hinged do.		1/5	each.	155
No. 3 Hinged Stop Cock Case, ...	6" × 6" 3/4	8' × 6" 4/6	inches. each.	155
Stand Cock Case, ...		8/6	each.	156
Fire Plug Box, ...		13/8	each.	156

MACFARLANE'S PATENT PUMPS.

				See Drawings, Vol. I.
	3,	3½,	inches.	Page.
No. 1 Pump, fitted for Copper Chamber, ...	24/6	29/6	each.	157
No. 2 Pump, do. do.	26/	30/6	each.	157
No. 1, bored and fitted complete, ...	37/6	44/6	each.	157
No. 2, do. do.	40/	48/	each.	157
	2,	2½,	inches.	
Pump Pipe, ...	3/2	3/6	per yard.	157
Pump Elbow, ...	2/11	3/3	each.	157
Pump Rose, ...		2/7	each.	157
Engine Pump Frame, ...		59/	pair.	158
Engine Pump Fly Wheel, ...		42/6	each.	158
Force Pump Frame, light pattern, 5' 4"		8/6	each.	158
Force Pump Frame, heavy pattern, 5' 6"		10/	each.	158
	1½,	2,	inches.	
No. 1 Pump Head Nozzle, ...	1/9	2/5	each.	158

MACFARLANE'S WATER CLOSET METAL.

	No. 1.	No. 2.		Page.
Water Closet Metal (Pan), ...	6/2	6/8	per set.	159
Ship Water Closet Basin, ...	3/8	5/3	each.	159

MACFARLANE'S BOILERS and Connections.

Boilers, Plain or with Spout, ...								12/	cwt.	Page. 160
	6,	7,	8,	9,	10,	11,	12,	14	ins.	
Furnace Doors, ...	1/10	2/	2/4	2/8	2/11	3/3	3/8	5/2	each	160
Furnace Grates, ...	1/	1/2	1/6	1/9	2/1	2/4	2/11	3/6	each	160
Furnace Lintels, ...								9½*d*	each	160

MACFARLANE'S PLUMBERS' TOOLS.

	1,	1½,	2,	2½,	3,	3½,	4,	4½	ins.		Page.
Syphon Mould Blocks, ...	2/9	3/2	3/5	3/8	4/2	6/3	9/4	12/6	each		161
Elbow Mould Blocks, ...	2/9	3/	3/6	4/6	6/8	9/	9/9	12/4	each		161
							No. 1.	2,			
Lead Ingot, ...							2/4	8/6	each		161
	4,	5,	6,	7,	8,	9,	10,	11,	12,	ins.	
Solder Pots, ...	5*d*	6*d*	8*d*	1/	1/5	1/9	2/1	2/5	3/6	each	161
	12 × 9½	14 × 11	17 × 13	20 × 15	24 × 17½				ins.		
Lead Boilers, ...	6/	8/2	13/6	17/6	24/				each		161
Plumbers' Chaffer Pans, ...									4/5	each	161
	for	3,	4,	5 Bolts							
Fire Grate and Front, ...		6/8	8/2	9/9 each							161

End of Price List for Vol. I.

VOLUME SECOND.

PART V.

MACFARLANE'S PATENT WATER CLOSETS.

See Drawings, Vol. II.

For	1,	2,	3,	4,	5,	6,	8,	10 Persons.		Page.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		
No. 1, Figs. 1 and 45,	2 2 6	3 13 9	4 10 9	5 17 8	6 18 2	8 9 9	11 0 0	13 10 3	each	18, 19
No. 2, Figs. 2 and 4,	2 14 9	4 14 0	6 5 4	7 11 8	8 19 8	10 19 4	14 9 10	17 1 6	each	20
No. 4, Figs. 5 and 6,	4 2 0	6 4 6	8 4 0	10 0 0	12 2 0	14 7 0	19 6 0	23 3 0	each	21
No. 5, Figs. 74, 75, and 78,	..	14 2 0	18 13 6	22 8 0	26 1 0	30 13 0	38 17 6	46 17 6	each	22, 23
No. 5, Figs. 7, 9, 9 and 10,	..	..	31 14 6	37 10 0	43 14 0	53 12 0	68 14 0	78 19 0	each	24, 25
No. 6, Figs. 77, 78, and 79,	..	14 12 0	19 6 0	23 19 6	28 17 6	33 15 0	43 14 0	53 4 0	each	26, 27
No. 9, Figs. 80, 81, 82, and 83,	10 11 6	17 0 0	22 18 0	28 4 6	33 19 0	39 12 0	52 3 0	62 8 0	each	28, 29
No. 7, Figs. 3, 11, 13, and 24,	12 11 0	21 9 6	27 14 0	31 13 0	41 16 6	49 8 3	63 12 0	78 8 6	each	30, 31

For Macfarlane's Patent Cast Iron Military Latrines, see *sheet A issued* by Her Majesty's War Department.

PART VI.

MACFARLANE'S PATENT ORDURE CLOSETS.

For	1,	2,	3,	4,	5,	6,	8,	10 Persons.		Page.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		
No. 12, Figs. 84 and 85,	1 18 6	3 7 6	4 7 6	5 12 3	6 14 8	8 2 6	10 11 0	12 19 0	each	34
No. 13, Figs. 86 and 87,	2 4 6	3 18 3	5 5 3	6 16 0	7 15 0	9 15 6	12 15 6	15 14 0	each	36
No. 14, Figs. 88 and 89,	..	5 5 0	8 13 0	10 19 0	13 2 0	15 5 0	20 2 0	24 15 0	each	37
No. 15, Figs. 90, 91, and 92,	..	16 1 0	20 17 6	25 4 6	29 14 3	34 9 6	43 18 0	52 17 6	each	38, 39
No. 16, Figs. 93, 94, 95, and 96,	..	25 4 6	31 7 0	37 3 0	43 4 6	53 4 0	66 3 0	78 12 6	each	40, 41
No. 11, Figs. 97, 98, and 99,	8 13 0	14 6 0	18 18 0	23 12 0	28 7 9	33 8 6	43 4 3	52 17 0	each	42, 43
No. 18, Figs. 100, 101, 102, and 103,	10 5 0	16 12 0	22 4 0	27 18 3	33 12 0	39 4 0	51 16 6	61 18 6	each	44, 45
No. 19, Figs. 104, 105, 106, and 107,	12 3 0	21 2 0	27 6 0	34 6 6	41 11 0	49 2 0	63 8 3	78 14 6	each	46, 47
Ordure Cart, Fig. 12,								31 0 0	each	48
Ordure Scraper, Fig. 108,								2/4	each	48
Ordure Bucket, Fig. 109,								14/6	each	48

PART VII.

MACFARLANE'S PATENT URINALS.

For	1,	2,	3,	4,	5,	6,	8,	10 Persons		Page.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		
No. 7, Fig. 111,	1 9 3	2 12 6	3 13 0	4 15 6	5 17 0	7 0 0	9 9 0	11 16 0	each	50
No. 2, Fig. 16,	18/6	..	..	..	..	..	..	..	each	50
No. 1, Figs. 112 and 113,	2 4 0	3 18 6	5 4 6	6 18 0	8 8 6	9 18 0	13 2 6	16 19 0	each	51
No. 5, Figs. 114, 115, 116, 117, 118, and 119,	4 14 0	7 6 0	10 6 6	13 0 0	15 9 6	18 1 6	24 4 6	30 5 0	each	52, 53
No. 4, Figs. 120, 121, 122, 123, 124, and 125,	6 0 0	10 7 0	14 10 6	17 19 0	21 16 0	25 10 0	34 4 0	42 17 0	each	54, 55
No 3, Figs. 17 and 17 A,	11 3 6	..	..	..	..	..	..	..	each	56
No. 3, Figs. 18 and 18 A,	..	18 13 0	..	..	..	..	..	..	each	56
No. 6, Figs. 126, 127, and 128,	..	..	26 10 0	35 3 0	41 10 6	47 5 6	62 11 6	78 1 6	each	57
	2,	3,	4,	5,	6,	8,	10,	12 feet long.		
Ornamental Screen, Fig. 15,	2 1 9	2 17 3	3 16 0	4 11 6	5 11 6	7 5 0	9 3 6	10 13 0	each	58
Cleansing Hose Apparatus, Fig. 19,								1 16 0	each	58
13-inch Globe Lamp, with Glass Cover, Standard, and Gas Fittings, Fig. 129,								2 8 0	each	58
Large double Light Hexagon Lamp and Standard, and Gas Fittings, Fig. 32,								10 9 6	each	58
13-inch Globe Lamp, with Standards and Gas Fittings, Fig. 32,								4 16 0	each	58

PART VIII.

MACFARLANE'S PATENT ASH BINS.

See Drawings, Vol. II.

No. 1 Ash Bin, Fig. 130,	21 × 30 × 54 3 3 0	24 × 30 × 54 3 11 6	30 × 30 × 54 4 10 6	36 × 30 × 54 5 4 0	in. each	Page. 59
No. 2 Ash Bin, Figs. 131 and 132,		21 × 30 × 24 3 4 6	21 × 30 × 30 3 10 0	21 × 30 × 36 3 18 0	in. each	60
No. 3 Ash Bin Hopper, Fig. 38,				1 2 6	each	60
No. 4 Ash Bin Door, Fig. 40,				0 11 0	each	60

PART IX.

MACFARLANE'S PATENT ABLUTION APPLIANCES.

For	2,	3,	4,	5,	6,	8,	10,	12 Persons.		Page.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		
No. 3 Wash Hand Range, Fig. 133,	2 11 6	3 13 0	4 14 0	5 13 0	6 10 0	8 7 6	10 8 0	12 8 0	each	61
No. 4 Wash Hand Range, Fig 134,	3 1 0	..	5 10 0	..	7 15 0	10 4 0	12 13 0	14 8 0	each	62
No. 1 Wash Hand Range, Fig. 25,	3 10 0	5 0 0	6 13 6	8 7 6	9 6 6	13 16 0	16 18 0	20 0 0	each	63
No. 2 Wash Hand Range, Fig. 46,	3 18 0	..	7 10 0	..	11 11 0	15 1 6	18 17 0	22 10 0	each	63
No. 5 Wash Hand Stand, Fig. 135,	..	..	..	..	..	..	..	1 9 3	each	64
No. 6 Wash Hand Stand, Fig. 136,	..	..	..	..	..	..	..	1 15 6	each	64
No. 1 Wash Foot Range, Fig. 27,	1 10 0	3 6 6	5 1 0	6 16 0	8 10 6	10 7 0	13 16 6	17 6 0	each	65

For Macfarlane's Patent Cast Iron Military Ablution Basins, see SHEET *B* and *C*, issued by Her Majesty's War Department.

MACFARLANE'S PATENT BATHS.

	5' 0" × 2' 1" × 1' 8"	5' 6" × 2' 2" × 1' 10"	6' 0" × 2' 3" × 2' 0"		Page.
	£ s. d.	£ s. d.	£ s. d.		
No. 1 Bath, Fig. 71,	2 4 0	2 13 6	3 1 6	each	66
No. 3 Bath, Fig. 149,	3 19 0	4 7 0	4 16 0	each	67
No. 2 Bath, Fig. 72,	..	5 1 6	5 9 6	each	68
No. 4 Sponging Bath, Fig. 137,			3 6 6	each	69

For Macfarlane's Patent Cast Iron Military Bath, See SHEET *D*, issued by Her Majesty's War Department.

MACFARLANE'S PATENT BATHING SHADES.

For	1,	2,	3,	4,	5,	6,	8,	10 Persons.		Page.
	£ s. d.	£ s. d.	£ s. d	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		
No. 1 Bathing Shade, Figs. 138, 139, and 140,	5 8 0	8 19 6	11 4 6	13 12 6	16 6 0	18 14 6	22 19 0	27 10 0	each	70, 71
No. 2 Bathing Shade, Figs. 141, 142, and 143,	9 9 0	16 3 0	22 2 0	28 12 0	34 7 9	40 10 6	52 5 6	65 8 6	each	72, 73

MACFARLANE'S PATENT DRINKING FOUNDAINS.

	£ s. d.		See Drawings, Vol. II. Page.
No. 4 Fountain, Fig. 144	3 7 0	each	74
No. 5 Fountain, Fig. 64	2 10 3	each	75
No. 6 Fountain, Fig. 145	4 8 0	each	76
No. 7 Fountain, Fig. 146	8 5 0	each	77
No. 8 Fountain, Fig. 147	30 5 6	each	78

MACFARLANE'S PATENT WATER TROUGHS.

	No. 1. Fig. 22.	No. 2. Fig. 21.	No. 3. Fig. 20.	No. 4. Fig. 148.		Page.
Length Breadth. Depth.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		
2 Feet x 1 foot 8 inches x 1 foot	0 15 0	0 17 6	1 16 6	..	each	79, 80
3 Feet x 1 foot 8 inches x 1 foot	0 18 3	1 0 6	2 3 6	..	each	79, 80
4 Feet x 1 foot 8 inches x 1 foot	1 9 0	1 12 0	2 12 0	..	each	79, 80
6 Feet x 1 foot 8 inches x 1 foot	2 5 0	2 6 0	3 5 0	..	each	79, 80
9 Feet x 1 foot 8 inches x 1 foot	3 2 6	3 8 6	4 8 0	..	each	79, 80
12 Feet x 1 foot 8 inches x 1 foot	4 16 6	4 14 6	5 9 0	..	each	79, 80
2 Feet x 2 feet 0 inches x 1 foot 4 inches	1 0 0	1 3 3	2 6 0	..	each	79, 80
3 Feet x 2 feet 0 inches x 1 foot 4 inches	1 7 0	1 12 6	2 16 9	..	each	79, 80
4 Feet x 2 feet 0 inches x 1 foot 4 inches	1 18 6	2 2 6	3 6 6	..	each	79, 80
6 Feet x 2 feet 0 inches x 1 foot 4 inches	2 18 0	3 4 0	3 19 6	..	each	79, 80
9 Feet x 2 feet 0 inches x 1 foot 4 inches	4 4 0	4 8 0	5 15 6	..	each	79, 80
12 Feet x 2 feet 0 inches x 1 foot 4 inches	5 16 0	5 17 0	7 3 0	..	each	79, 80
2 Feet x 2 feet 0 inches x 2 feet	..	..	..	1 13 0	each	80
3 Feet x 2 feet 0 inches x 2 feet	..	..	..	2 7 0	each	80
4 Feet x 2 feet 0 inches x 2 feet	..	..	..	3 1 0	each	80
6 Feet x 2 feet 0 inches x 2 feet	..	..	..	3 15 6	each	80

PART X.

MACFARLANE'S PATENT DESK STANDARDS.

			Page.
No. 1 Desk Standard, Fig. 35—26, 27½ and 29 inches high	2/11	each	81
No. 2 Desk Standard, Fig. 47—26, 27½ and 29 inches high	2/11	each	81
No. 9 Desk Standard for Book Shelf, Fig. 58—20, 21½, and 23 inches high	2/11	each	81
No. 10 Single Desk Standard for Book Shelf, and with Hook, Fig. 59—26, 27½, and 29 inches high	3/4	each	82
No. 3 Folding Desk Standard, Fig. 49—26, 27½, and 29 inches high	3/10	each	82
No. 14 Folding Desk Standard, Fig. 60—27½, 29, and 31 inches high	4/1	each	82

MACFARLANE'S PATENT DESK AND BENCH STANDARDS.

			Page.
No. 3 Desk and Bench Standard, Fig. 33—26 × 14, 27½ × 15, and 29 × 16 inches high	4/5	each	82
No. 4 Desk and Bench Standard, Fig. 48—26 × 14, 27½ × 15, and 29 × 16 inches high	4/5	each	82
No. 15 Desk and Bench Standard, for Book Shelf, Fig. 168—20 × 14, 21½ × 15, 23 × 16 inches high	4/5	each	83
No. 16 Folding Desk and Bench Standard, Fig. 169—26 × 14, 27½ × 15, and 29 × 16 inches high	5/6	each	83
No. 17 Folding Desk and Bench Standard, Fig. 170—27½ × 15, 29 × 16, 31 × 17 inches high	5/9	each	83
No. 1 Ink Well Cover, Fig. 181	2d	each	83
No. 2 Ink Well Cover, Fig. 182	5d	each	83

MACFARLANE'S PATENT BENCH STANDARDS.			See Drawings, Vol. II.
			Page.
No. 1 Bench Standard, Fig. 34—12, 13, 14, 15 and 16 inches high,	1/3	each	84
No. 1 Bench Standard, Fig. 34—17, 18, and 19 inches high,	1/7	each	84
No. 2 Bench Standard, Fig. 51—12, 13, 14, 15, and 16 inches high,	1/9	each	84
No. 2 Bench Standard, Fig. 51—17, 18, and 19 inches high,	2/	each	84
No. 3 Folding Bench Standard, Fig. 52—18 inches high,	3/6	each	84
No. 18 Bench and Back Rail Standard, Fig. 176—15 and 16 inches high,	3/2	each	84
No. 18 Bench and Back Rail Standard, Fig. 176—17, 18, and 19 inches high,	3/6	each	84
No. 4 Bench and Back Rail Standard, Fig. 53—15 and 16 inches high,	2/8	each	84
No. 4 Bench and Back Rail Standard, Fig. 53—17, 18, and 19 inches high,	2/11	each	84
No. 5 Bench Standard, for Book Board, Fig. 54—18 × 30 inches high,	3/4	each	84
No. 6 Folding Bench and Back Rail Standard, Fig. 55—18 inches high,	4/3	each	85
No. 7 Bench Standard, for Folding Book Board, Fig. 56—18 × 30 inches high,	4/3	each	85
No. 8 Folding Bench Standard, for Folding Book Board, Fig. 57,—18 × 30 inches high,	5/	each	85
No. 11 Bench Standard, for Parks, &c., Fig. 177—19 × 31 inches high,	6/10	each	86
No. 12 Bench Standard, for Parks, &c., Fig. 178—19 × 31 inches high,	4/8	each	86
No. 13 Bench Standard, for Parks, &c., Fig. 179—19 inches high,	3/4	each	86
No. 11 Bench, for Parks, (complete,) Fig. 184—10 feet long,	41/6	each	86

MACFARLANE'S PATENT TABLE STANDARDS.			
			Page.
No. 6 Table Standard, Fig. 50—24, 26, 28, and 30 inches high,	3/2	each	85
No. 19 Bench and Table Standard, Fig. 180—18 × 31 inches high,	3/6	each	85

End of Price List for Vol. II.

RDL.
18.7.1966.